# Paper TRADE JOURNAL

**MAY 16, 1952**



USE CULLED WOOD FOR KRAFT AND BOND PAPERS . . . Page 11

POWER PLANT DESIGN . . . Page 24

BROADENING USES OF MULTIWALL-SACKS . . . Page 45



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**WOOD PULP**

G

*Established 1886*

"Enterprises of great pith and moment."
SHAKESPEARE

By every standard—dollar volume, position in American industry, number of employees, importance to the economic life of the nation and high quality of product—by any or all of these gauges, Pulp and Paper is assuredly among the "enterprises of great pith and moment."

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— INCORPORATED —
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## We're Building 'Em BIG and We're Building 'Em *Fast*

Things are really humming these days at the Moore & White plant. Complete Fourdrinier and Cylinder machines *have* been built, *are* being built, and *will* be built—as fast as such mechanical mammoths *can* be built.

In the plants of some of the nation's leading paper and board manufacturers, recently built Moore & White machines are now in operation turning out the material needed to meet the zooming demand of business and industry—and doing it with the efficiency that spells profit.

Work in progress in the Moore & White plant today—on the machine tools and on the drawing boards—includes complete paper-making machines for new customers and for customers who have long known that there's no place like Moore & White for getting things done, big or small.

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# Less water returned to wire with B. F. Goodrich Dukbak table rolls

● You can get more even formation and fewer spotted sheets on your Fourdrinier if it is equipped with B. F. Goodrich Dukbak table rolls. Ordinary rolls carry a great deal of water on around; throw it up against the wire again. B. F. Goodrich research has overcome this problem with rolls made of rubber that doesn't like water —throws it down and away the instant the water touches the surface. That is why this roll is called Dukbak; water can't stick to it long enough to get back into the sheet.

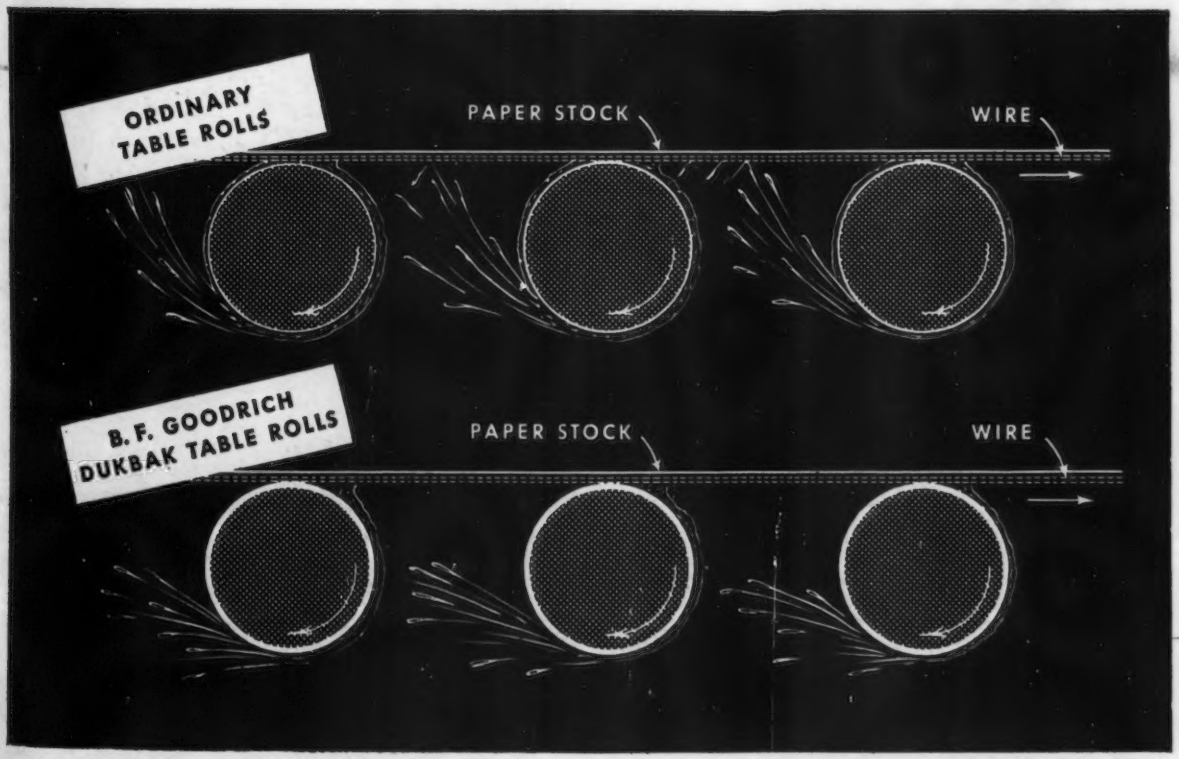
B. F. Goodrich Dukbak rolls are made of a special long-life rubber— ground straight and true so as to move evenly with the wire without developing high or low spots. With wire always level, the sheet produced is more uniform.

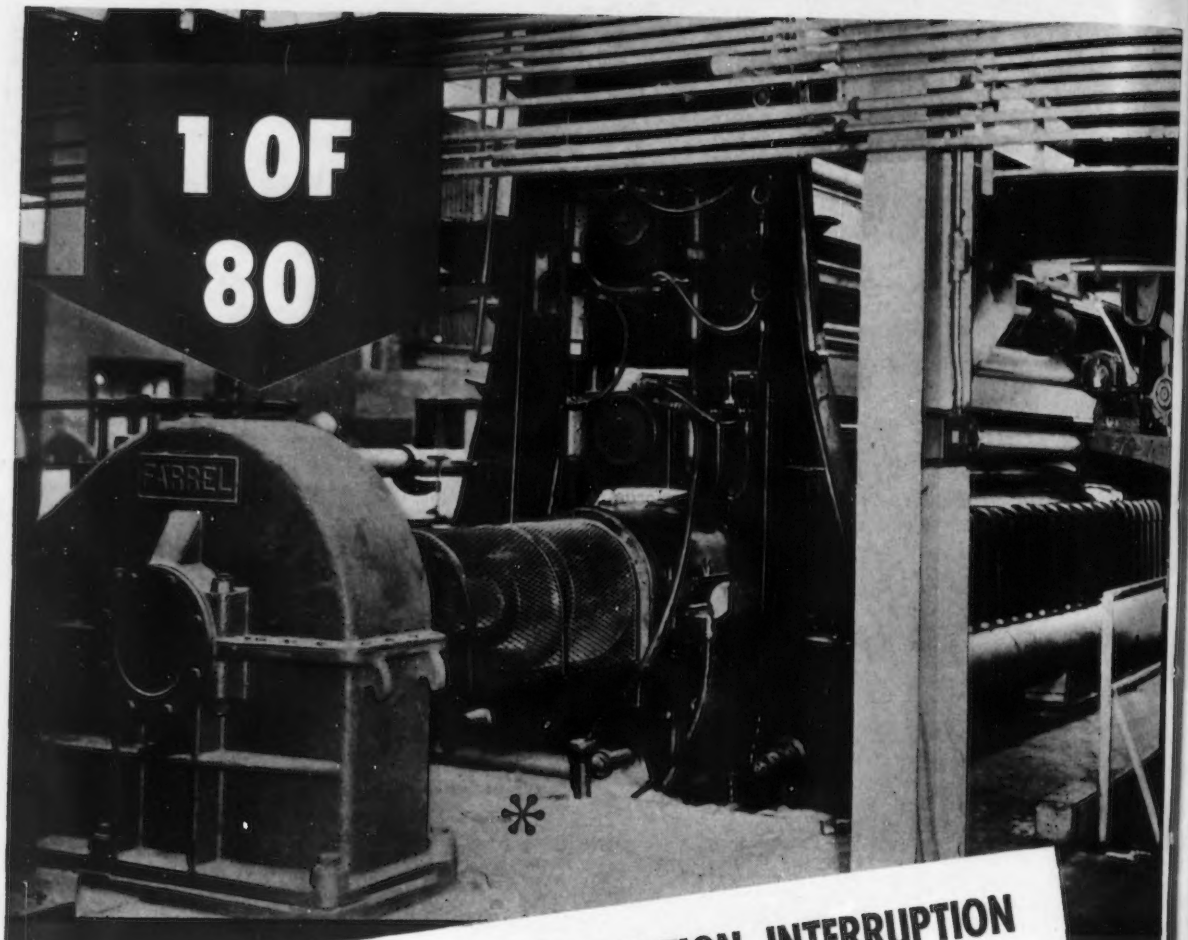
A Dukbak roll bent by dropping can be straightened readily, because the cover, attached by the Vulcalock process, is an inseparable part of the roll. Corrosion is prevented by sealing ends with rubber.

When you order a Fourdrinier, specify B. F. Goodrich Dukbak rolls to your machine builder. Or, if you are buying or re-covering rolls, write *The B. F. Goodrich Co., Industrial & General Products Division, Akron, Ohio.*

*Dukbak Table Rolls* BY

**B.F. Goodrich**






# SAFEGUARDS AGAINST PRODUCTION INTERRUPTION IN A SINGLE SOUTHERN MILL

Farrel® speed reducers were selected for the first paper machine in this Southern mill, and because their performance has been so satisfactory, additional units have been installed as new paper machines have been added, until there are now a total of eighty Farrel speed reducers in this mill.

Farrel speed reducers have a number of advantages which account for their outstanding performance records. The quiet, vibration-free operation of the herringbone gears results from extreme accuracy of tooth spacing, contour and helix angle . . . qualities inherent in the Farrel-Sykes method of gear generation. Precision manufacture and highest grade materials contribute to long gear life.

*Write for further details of these outstanding units. Ask for a copy of Bulletin 449.*

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*Farrel-Birmingham* ®

* Farrel single-reduction speed reducer transmitting power from an electric motor to a calender — one of eighty Farrel units in this mill. The calender is equipped with Farrel rolls.

FB-753

Paper TRADE JOURNAL

VOL. 134 MAY 16, 1952 No. 20

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## Ask Double Time For Sunday Work

The Maine District Council of Paper Mill Unions passed a resolution advocating double time for Sunday work in paper mills and two thirds pay for injuries under the Workmen's Compensation Act at their annual meeting. Stephen Strout, Old Town was elected president of the Council. Eighty-four delegates representing 23 local unions in Maine attended the sessions. Other officers elected were Floyd Coombs, Woodland, Joseph Doucette, Bucksport, and Emilien Levesque, Madawaska, vice-president; Albert Morin, Old Town, recording secretary; Merritt Hayden, Brewer, treasurer; Ernest White, Woodland, inner and outer guard.

## Mexican Sulfur for U. S.

The Poza Rica refinery of Petróleos Mexicanos, in the state of Tamaulipas, will proportion 3,500 tons of sulfur each month for Cuba, Canada and the United States. Shipments are to be made from the port of Tampico, a Pemex official said, while sulfur is carted to the port city by a fleet of 25 freight trucks which operate daily. First shipment was scheduled for May 1.

## REMEMBER THESE DATES

*JUNE 6:* Miami Valley Div. of the American Pulp and Paper Mill Superintendents Assn., Orr Felt & Blanket Co., Piqua, Ohio.

*JUNE 6-7:* The Paper and Twine Assn., Annual Meeting, Nippersink Manor, Genoa City, Wis.

*JUNE 17-19:* American Pulp and Paper Mill Superintendents Assn., 33rd Annual Convention, Book-Cadillac Hotel, Detroit, Mich.

*JUNE 18-20:* Canadian Pulp and Paper Assn., Technical Section, Annual Meeting, Murray Bay, Que., Canada.

*JUNE 19-21:* Empire State Section of TAPPI and the Niagara Branch of Tech. Section, Canadian Pulp and Paper Assn., Joint Meeting, General Brock Hotel, Niagara Falls, Ont., Canada.

*JUNE 20-21:* Maine-New Hampshire Section, TAPPI, The Belgrade Hotel, Belgrade Lakes, Maine.

*JUNE 23-25:* Forest Products Research Society, Annual Meeting, Milwaukee, Wis.

*JUNE 23-27:* American Society for Testing Materials, Annual Meeting, 15th Anniversary, Hotel Statler, New York, N. Y.

*SEPT. 9-13:* Seventh National Chemical Exposition, Chicago, Ill.

*SEPT. 18-21:* Northeastern Div., of the American Pulp and Paper Mill Superintendents Assn., Poland Spring House, Poland Spring, Maine.

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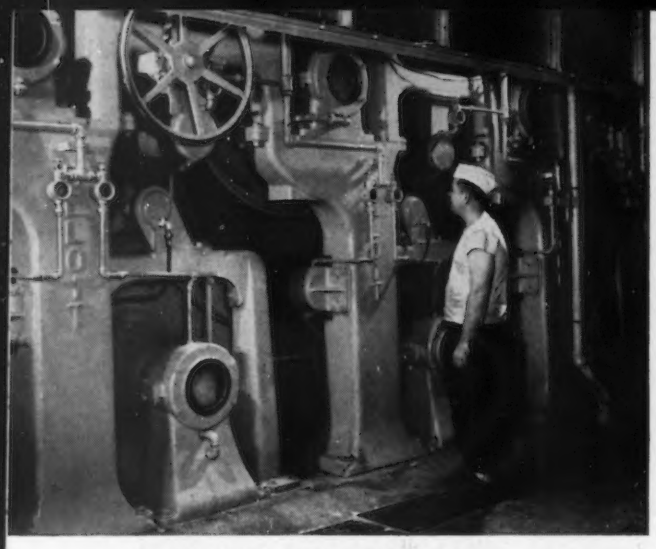
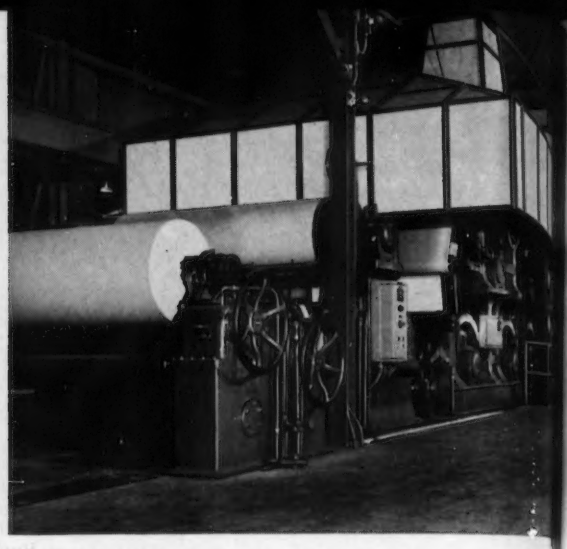


**ANTIFRICTION BEARING RACES** in one of the world's largest paper machines were discovered, in a routine inspection, to be scored owing to an inadequate lubricant. A Sunvis H.D. 700 Oil was then adopted, with the result that the trouble was minimized. This oil maintains an unbroken lubricating film under heavy pressures and high temperatures.



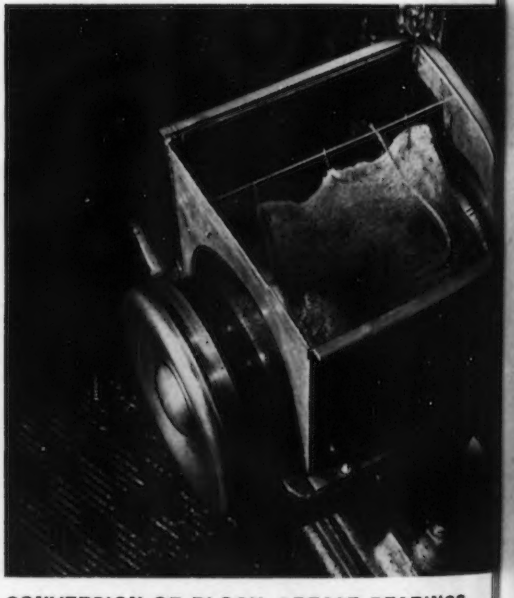
**PLAIN BEARINGS** burned out in this mill at the rate of about 125 a year, owing to carbon deposits. Circo XXX Heavy Oil was tried out as a solution to the problem, because this oil does not form carbon or varnish. There has not been a single bearing failure since that time traceable to lubrication, and the mill is saving large sums annually in maintenance.

# HOW TO MAKE DRIER ROLL BEARINGS LAST LONGER

Many mills have prolonged the life of their drier roll bearings, both antifriction and plain, through the use of two Sun lubricants: Sunvis H.D. 700 Oils for antifriction bearings, and Circo XXX Heavy Oil for plain. In addition, they have reduced maintenance costs and cut down on power consumption.

In antifriction bearings, Sunvis H.D. 700 Oils prevent scoring by providing a film which does not fail under heavy pressures and high temperatures. In plain bearings, Circo XXX Heavy Oil protects by lubricating without forming carbon or varnish.

Mills now using block grease for their drier roll bearings can convert to Circo XXX Heavy Oil quickly and economically. This offers them the opportunity to cut power consumption as much as 20 percent, prolong the life of their machines, and lower costs of maintenance. For "how-to-do-it" instructions, case histories, and complete data on Sunvis H.D. 700 Oils or Circo XXX Heavy Oil, call the nearest Sun Office, or write to Department PT-11.



**CONVERSION OF BLOCK GREASE BEARINGS** to Circo XXX Heavy Oil lubrication is a quick and easy way to lower power consumption, reduce bearing failures, and cut maintenance costs. To learn just how simple it is to convert, ask for Sun's "how-to-do-it" folder.

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Paper TRADE JOURNAL

# TRENDS

Office of the PAPER TRADE JOURNAL,
Wednesday, May 14, 1952.

Hope that consumer buying would revive with the removal of the curb on installment purchases is not at this moment very bright. Belief that suspension of Regulation W would inaugurate a new wave of inflationary spending is passing. Early indications are that the response is not going to be large, and that the U. S. consumer is in no hurry to buy anything, even though purchasing power is currently high.

Conceding that the situation is without parallel in the record of merchandising, the retailer, distributor and manufacturer alike are seeking reasons for this "abstention from buying."

Underlying reasons appear to be those which also are influencing the industry's business: uncertainty about the future, confused thinking about today's conditions, and a strong desire for security. All of which leads to prudence, and a decision to use what is on hand, to buy only when it is needed, and then to shop for price and quality.

Business generally appears to have accepted the fact that no one is buying in a hurry, and that everyone is looking for lower prices.

Says Chemical Bank & Trust Co.'s *Trends*, Thursday, May 1, under the sub-head "Consumer Frugality":

"When Americans buy only for their actual needs, business is bound to be relatively slow because our production-distribution machine is geared to servicing a luxury economy. There seems to be a strong current conviction among consumers that prices are bound to drop. The correctness of this appraisal—if purchases continue to be deferred — is not seriously challenged by most retailers."

## Principal Uncertainties

Two lines of thinking which differ from the general bent have within them acorn-to-oak possibilities. Involved are the principal uncertainties which confuse thinking and restrain buying: (1) Will *electioneering* plans start off a new wave of inflation by means of another round of wage increases, industry by industry? (2) Will the Red dallying and maneuvering in Korea speed an all-out Defense effort?

Recognition of the fact that "anything could happen here" serves to keep the general public alerted. Also it serves to keep the economy somewhat out of balance, as most believe Moscow intends it should.

## The Industry's Record

Effect of this attitude on the industry's output is indicated in the record for the week ended May 3. Bellwether of the industry—paperboard—dropped to 82 percent of capacity, which also was the average for the month of April. Ratio of production of unbleached kraft paper to potential mill capacity dipped to 74.3 percent for the week, compared with 82.9 percent for the earlier week, and with 96.5 for 1951's week. Figure for paper production was 87.8 percent, compared with revised percentage of 92.8 for the week ended April 26, and with 102.3 a year ago.

## Price Changes

**Set-Up Boards.** Prices of set-up boards have begun to move from ceiling prices (OPS 108). *Plain chip*, in quantities of 10 tons or over, was first dropped to $100 from the $105 price in Pittsburgh, Buffalo, Boston, New York and Philadelphia, and now is priced at $95 in the New York area. *Filled news*, 10 tons, New York price is $95, a drop of $15 from the $110 ceiling. *News vat lined chip* is priced at $95, a drop of $12.50 from the $107.50 ceiling; chip, tube and can stock is dropped to $100 from the $110 ceiling.

New prices on other set-up grades in 10 tons or over, New York, are: Solid news, $105; creasing chip, $97.50; mounting chip, $105; white wood vat lined chip, $135.

**Shipping Sack Paper.** A widespread rumor tells of a $5 drop in the price of shipping sack paper of a leading mill. Judging from market comment, it might be any one of several brands, for the market is that way. Demand is off and market undertone is not firm.

## Raw Materials

Suppliers of all types of raw materials to the industry tell of settled market dullness. Not only is there no desire to acquire more stock but the mills do not want contracted amounts. They want to work off floor stocks which, in view of curtailed demand for their product, loom overlarge.

All markets are heavy with supply. Pricewise they are soft, though reductions mean little. Buyers are not interested at any price.

**Cotton Cuttings.** Restricted buying of the past weeks has forced high papermaking grades from ceiling prices.

In the New York area, white shirts and unbleached muslins were dropped another 1c, to 18½c, dealers' prices; light silesias, blue overalls, and light prints, ½c a pound, to 15c, 13½c and 10c respectively.

**Cotton Linters Market.** Moderate activity reported for the week ended May 8 was in felting grades which comprised the bulk of the sales. Oil mills were not offering freely, and prices for all qualities were steady to firm at previously reported levels: *1st cut*, Memphis market, grade 2, $13/11; grade 3, $10.75/9.25; grade 4, $9/8.25; *2nd cut*, grade 5, $8/7.75; grade 6, $7.50/7; grade 7, $7.

Some oil mills have completed seasonal operations, and reports are that oil mill stocks of *free* linters are moderate in volume. Linters production during the 1951-52 season will approximate 1,725,000 bales of 600 lbs., according to the Dept. of Agriculture report. This is based on the preliminary estimate of cottonseed production, and assumes that 88 percent will be crushed and that the August-March average cut per ton of 186 pounds (net weight) will be maintained through the remainder of the season.

**Export Licensing.** A total of 444,114 bales of cotton linters and pulp (bleached linters) has been licensed for export since August 1, 1951, the beginning of the current crop year. This quantity covers 205,602 bales of raw linters and 238,512 bales of pulp for export to 25 countries. Since April 7, 5,511 bales of linters have been licensed, though the figure has been reduced by cancellation of orders and export licenses for France and Greece by 1,151 bales. No license applications are pending, OIT reports.

**1951 Cotton Crop.** In a final report released on May 8, the Agriculture Department estimated the 1951 cotton crop at 15,130,000 bales, which compares with December forecast of 15,290,000 bales.

Cotton planting this year may be considerably under the 1951 crop and Govt. expectations, in the opinion of some in the industry. The 1951 crop losses due to pest, drought, and labor difficulties, reached such proportions that planters tell of their intentions to abandon cotton planting this year.

**Prices for Middling.** In the 10 spot markets, prices for middling 15/16" cotton averaged 38.58 cents a pound for the week ended May 8, against the earlier week's average of 38.86c and 45.25c for 1951's week.

**Bagging.** There is so little life in this market that it hardly constitutes trading. Dealers believe the heavy stock position of consumers is only partially responsible. Drop in demand for mill product also is involved. No early improvement is seen. The market continues bearish.

Paper mills report lower prices offered on their regular grades but that price is no consideration. They are out of the market. Southern and midwestern buying for cotton and automobile industries is spotty; price offers are low.

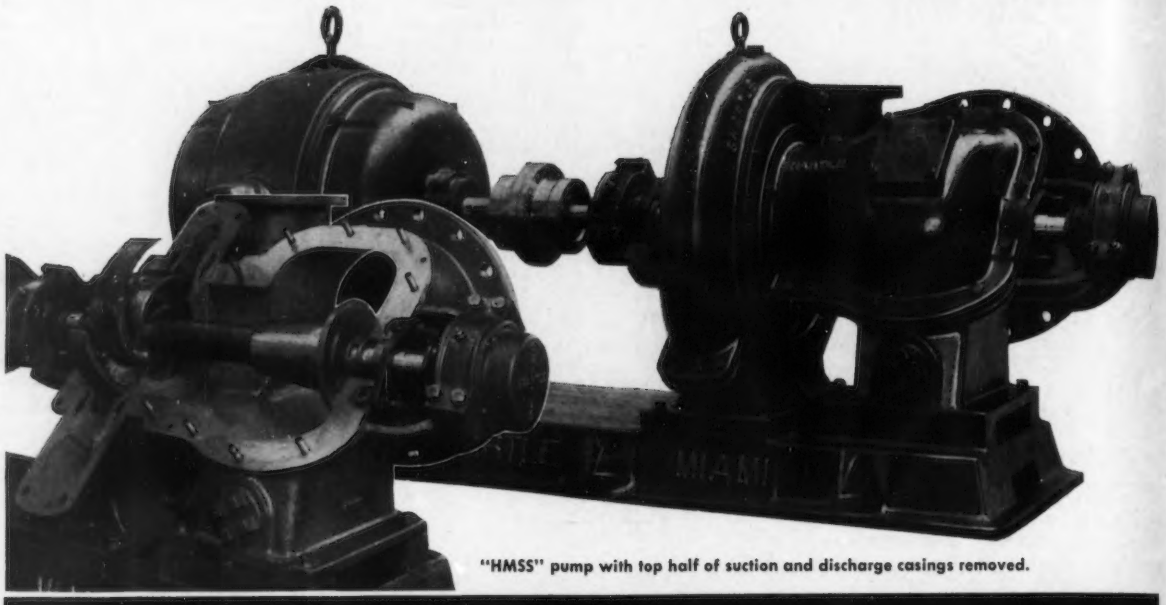
Foreign scrap burlap at dealer prices of $4/4.75 is close to rock-bottom, though lower figures also have been mentioned.

—E.P.N.

**Paperboard Production (Tons)***

| | May 3 1952 | Apr. 26 1952 | May 5 1951 | Month of April |
|---|---|---|---|---|
| Production | 199,614 | 206,373 | 252,896 | 1,002,866 |
| New Orders | 256,873 | 183,440 | 379,141 | 1,049,281 |
| Unfilled Orders | 417,564 | 363,178 | 771,457 | 417,564 |
| % of Activity | 82 | 83 | 107 | 82 |

* Source: National Paperboard Assn.



"HMSS" pump with top half of suction and discharge casings removed.

# NEW Shartle fully split Side Suction Centrifugal

**The Miami "HMSS" pump is a heavy duty side suction stock pump especially designed to handle high density pulp and paper stocks. Will pump practically all types of stock and is available in several sizes, with capacities ranging from 100 to 3700 G.P.M.**

• DIAGONALLY SPLIT SUCTION and DISCHARGE CASINGS make it possible to remove vertically, the complete rotating element without disturbing piping connections—an exclusive Shartle-Miami feature.

• LARGE SIDE SUCTION flanged for standard piping connections or furnished with a—

• HORIZONTAL SUPER SUCTION that can be grouted into wall of chest. This arrangement is provided with a hand-wheel operated Shartle slide valve for shutoff. A large vent opening is provided in suction casing to quickly release air should air binding occur in the pump.

• HEAVILY CAST BASE AND CASINGS—makes for rigidity and vibration-less operation.

• OVERSIZE shaft carried in short centered anti-friction bearings. Impellers specifically designed to suit stock and pumping conditions.

• SPIRAL RIBBED SIDE PLATES, an exclusive Shartle-Miami feature that prevents rags and strings from plugging between the impeller and side plates, and allows closer clearance for greater efficiency.

• DRIVE ARRANGEMENT: To suit mill requirements for either direct connected or belt drive.

• MATERIALS: Furnished in any material or combination of materials to suit stock conditions.

**This is just one pump on the complete line of Shartle Miami stock and white water pumps, so send your pump inquiries to Middletown.**

## SHARTLE BROS. MACHINE CO.
### Middletown, Ohio

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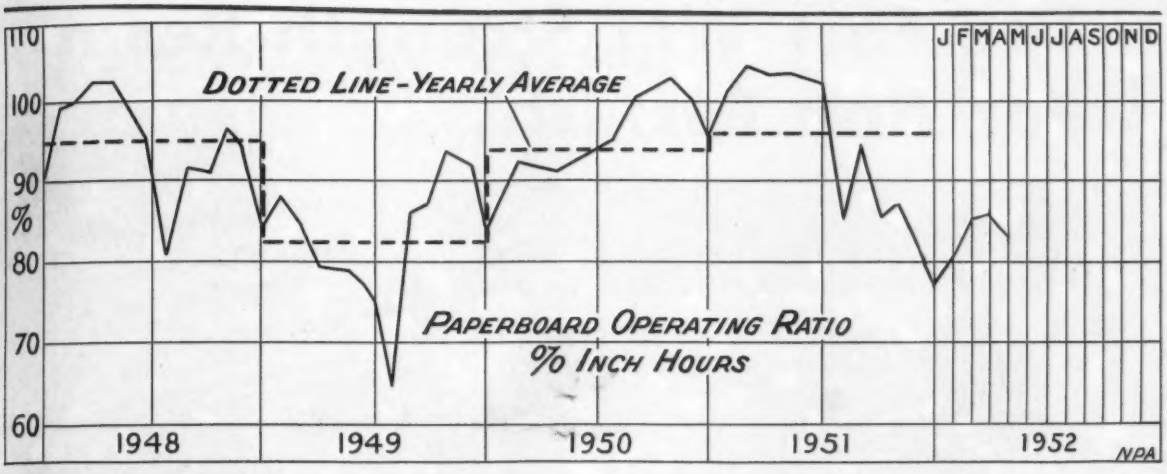
# OUR BUSINESS




## Brief of Important Figures

| Source | Production | WEEK ENDING May 3, '52 | Apr. 5, '52 | May 5, '51 |
|---|---|---|---|---|
| APPA | Paper Production Percent Capacity[3] | 87.8 | 93.8 | 102.3 |
| | Unbl. Kraft Paper Production Percent | 74.3 | 96.5 | 96.5 |
| NPA | Paperboard Operating Ratio Percent Inch Hours | 82 | 83 | 107 |
| | | **Mar. 1952** | **Feb. 1952x** | **Mar. 1951** |
| APPA | Paper Production* (Except Newsprint and Building Papers) ....Tons | 904,000 | 865,000 | 913,000 |
| | New Orders ....Tons | 859,000 | 845,000 | 958,000 |
| | Unfilled Orders ....Tons | 874,000 | 907,542 | 980,880 |
| | Shipments ....Tons | 889,000 | 854,392 | 916,000 |
| | | **Apr. 1952** | **Mar. 1951** | **Apr. 1951** |
| NPA | Paperboard Production ....Tons | 1,002,866 | 813,744 | 1,006,972 |
| | New Orders ....Tons | 1,049,281 | 844,303 | 956,085 |
| | Unfilled Orders ....Tons | 417,564 | 380,443 | 646,878 |
| | **Our Customers Activities Index[1]** | **Latest Mo.°** | **Previous Mo.°** | **Year Ago°** |
| FRS | Manufactures Total Index | 228 | 226 | 228 |
| | Durable Mfg. Index | 281 | 278 | 268 |
| | Nondurable Mfg. Index | 186 | 184 | 196 |
| | Chemical Products Index | 298 | 301 | 291 |
| | Mfg. Food Products Index | 149 | 152 | 149 |
| | Printing and Publishing Index | 175 | 170 | 176 |
| ODC | Magazine Advg.-Printer's Ink Index | 369 | 379 | 345 |
| | Retail Sales Combined Adjusted Index | 382.6 | 381.6 | 381.5 |
| | Drug Index | 258.3 | 253.4 | 255.7 |
| | General Merchandise Group Index | 407.6 | 405.7 | 414.5 |
| | Grocery and Combination Index | 447.0 | 453.4 | 423.1 |
| | **Prices Index** | | | |
| BLS | Consumers Price Index[1] | 187.9 | 189.1 | 183.8 |
| | Wholesale all Commodities[4] | 112.6 | 113.0 | 116.5 |
| | Wholesale Processed Foods | 109.7 | 110.1 | 112.9 |
| | Commodities other than Farm Products and Foods[4] | 114.3 | 114.3 | 117.2 |
| | Wholesale Pulp, Paper[4] and Allied Products | 118.4 | 118.2 | 120.5 |
| | Purchasing Power of Dollar, Consumers Prices[1] | 53.2 | 52.9 | 54.4 |
| | **General Activity Index** | | | |
| FRS | Mfg. Production-Worker Payroll[4] | 130.9 | 132.9 | 128.5 |
| | Unemployment Compensation Initial Claims (M) | 890 | 1,382 | 770 |
| | Miscellaneous Carloadings-Thousands of Cars | 1,463 | 1,405 | 1,373 |
| | Electric Output (Million KW hr.) | 36,768 | 39,710 | 33,102 |
| PTJ | Average 32 P & P Common Stocks as of May 10 | $34.52 | $35.09 | $39.87 |

[1] 1935-39 = 100 Unadjusted Index.
[3] New 6-7 day basis.
[4] New Index 1947-1949 = 100.
* For details see APPA Monthly Statistical Summary—March 1952 Estimated Figures.
° Latest Month Available on Request.
x Revised figures.

# The Fast Wet-Strength Resin For Any Furnish...

## UFORMITE 700

Wet-strength bag stock is a typical job for UFORMITE 700. So are toweling, food wrap, blueprint, map paper, twisting tissue, liner board. It's suitable to almost any end use and any furnish—groundwood, kraft, sulfite, or rag.

In wet-strength paper, UFORMITE 700 gives you these advantages:—

1. **Fast wet strength**—*right off the machine*
2. **High efficiency**—*over a wide range of resin-to-pulp ratios*
3. **Adaptability**—*to almost any furnish*
4. **Ease of mixing**—*without acid, aging or special equipment*
5. **Convenient pH control**—*with acid, alum, or blends of acid and alum*
6. **Wide flexibility**—*in point of addition*
7. **Excellent stability**—*for at least 6 months*
8. **Availability**—*in tank car quantities*

Write for your sample of UFORMITE 700 and for technical literature. For detailed recommendations, tell us about your special problem.

### OTHER DEPENDABLE WET-STRENGTH RESINS

Rohm & Haas makes a complete range of dependable wet-strength resins:—UFORMITE 467, liquid anionic type for efficient, low-cost wet strength, particularly suitable for beater addition—UFORMITE 520, powdered anionic type corresponding to UFORMITE 467—and UFORMITE 471, liquid cationic type, suitable for all furnishes, any addition point. We'll be glad to mail you literature on these UFORMITE resins, also.

*UFORMITE is a trademark, Reg. U.S. Pat. Off. and in principal foreign countries.*

CHEMICALS FOR INDUSTRY

**ROHM & HAAS COMPANY**

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Washington Square, Philadelphia 5, Pa.

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Paper TRADE JOURNAL

## Details Financing Arrangements

Details of arrangements for financing Ketchikan Pulp Co., joint venture of American Viscose Corp. and Puget Sound Pulp and Timber Co., in the maximum amount of $46 million were announced recently by Lawson Turcotte, president of Ketchikan Pulp Co. They consist of the sale of Ketchikan Pulp Co. first-mortgage bonds to institutional investors to the extent of 80 percent of the cost of the pulp mill or $36 million whichever is smaller; a loan of $3 million to the Ketchikan Pulp Co. by Viscose; and issuance of common stock for $7 million to be paid in equal amounts by Viscose and Puget, with each company receiving one-half of the stock.

These financing arrangements clear the way for immediate start of construction of a 300-ton minimum daily capacity, high-Alpha pulp plant at Ward Cove, 6 miles from Ketchikan, Alaska, marking the beginning of the woodpulp industry in that territory. Completion date is set for June, 1954.

Although Ketchikan Pulp Co. is a new undertaking in a new pulp territory, it is unique in that from the start the company will have an assured perpetual supply of timber through its contract with the Forest Service of the United States Department of Agriculture, an assured market for its pulp by a 20-year contract with American Viscose Corp., and full benefit of the pulp know-how of Puget Sound Pulp and Timber Co.'s management. Key operating personnel at Ketchikan will be fully trained by Puget.

The general construction contract has been awarded to Ward Cove Builders, a joint venture of Howard S. Wright & Co., of Seattle, and Guy F. Atkinson Co. of San Francisco, with engineering and design in charge of Harold D. Cavin, of Puget.

Dr. Frank H. Reichel, chairman and president of American Viscose, is chairman of the board of Ketchikan Pulp Co.; Lawson P. Turcotte, president and director of Puget Sound Pulp and Timber Co., is president and director of Ketchikan; William H. Brown, treasurer, secretary and director of Viscose, is vice-president, treasurer and director of Ketchikan; Robert H. Evans, director and legal counsel of Puget, is vice-president, secretary and director of Ketchikan. Other members of the board of directors of Ketchikan are Fred G. Stevenot, chairman of the board of Puget, John G. Jackson, director and general counsel of Viscose, Henry H. Bitler, director of Viscose, and Erik T. Ekholm, vice-president of operations at Puget.

# Utilize Waste Cull Wood In Coarse and Fine Paper

Experiments linking kraft and waste fiber to produce a sheet with high tear and bursting strength have proven so successful at Herty Laboratory that the group running the tests plans to establish an initial pulp operation in Georgia.

This initial pulp operation will be followed by another unit in a separate Georgia area and a third in Northern Florida.

Joseph Glenn Weimer said these operations will be devoted entirely to the production of pulp and will work in closest harmony with the kraft industry.

Location of the proposed pulp units was not released.

These developments at the Herty Foundation Laboratory are the direct achievements of Edward R. Timlowski of Cleveland, Ohio, already widely known for his accomplishments in the field of annual fibers and both forest and agricultural wastes. He is associated with Joseph Glenn Weimer of Montevideo, Uruguay and New York City who is directing a long series of developments in hardwoods, waste woods and wood wastes at the Herty Laboratory. Both Mr. Timlowski and Mr. Weimer are officers and directors of Chemcel Corp. of Cleveland, Ohio and Hoosick Falls, New York and the Kinsley Chemical Company of Cleveland, Ohio who are collaborating in the Herty developments. Collaborators also in these developments are the Noble and Wood Machine Company of Hoosick Falls, New York who have placed permanent installations of the mechanical units designed exclusively for Chemcel Corp. at the Herty Laboratory. Frank Hayes of the Noble and Wood Machine Company also is an officer and director of Chemcel Corp. and the Kinsley Chemical Company.

A later announcement by Herty officials states that good quality print and book papers and white paper suitable for coating and diversified products have been made from bleached pulp.

Walter L. Hendrix, in charge of operations at the Herty institution had the following to say with regard to his latest development:

"For a first machine run this pulp worked very satisfactory. It was easily bleached to 70 brightness. It formed beautifully and showed a remarkable wet strength with excellent drainage. I believe that further work on this type of fiber will even show a great improvement over the very good results which were obtained during this initial operation."

Frank Hayes gave this version of the latest development: "The bleached pulp which has been obtained during this initial demonstration appears to be suitable for the production of most printing papers without addition of any other fibers. It shows great promise as a blending medium with longer fibers for improvement to some more expensive papers and as a means of retaining full strength value from those fibers.

"The production cost of the semi-chemical bleached pulp from culls and wastes by our methods is such that it will be an economical factor in general paper production within the limits of its adaptation."

## Westminster Plans Bleached Sulphate Plant for Prince George

The Westminster Paper Co. Ltd., New Westminster, B. C., have recently announced plans to construct a bleached sulphate plant in Prince George. This is awaiting the granting of a forest license in the Willow River Valley. Plans are for a $25 million mill which will employ more than 650 workers and produce approximately 300 tons of pulp a day. Production of the plant would be shipped to New Westminster to the finishing plant of the company.

At present shipment would have to be made via the Canadian National Railway to Jasper, Alberta and hence back to Vancouver, B. C. If the Pacific Great Eastern were completed through to Vancouver shipment would be greatly facilitated. 300 tons a day would require about six rail cars from Prince George and added to this would be production from the Western Plywoods Co. proposed plant at Quesnel.

If the two firms establish plants in the interior it is almost certain that the B. C. Power Commission will go ahead with plans for the hydro-electric project on the Quesnel River.

## Paterson Parchment Improvements

A. J. Vreudenburg, chief engineer of the Paterson Parchment Paper Co., Bristol Township, Pa., has announced that Mahony-Troast Construction Co. will shortly start the construction of a project which will greatly enlarge their plant facilities. This consists of the erection of a new 52′ x 52′ x 29′ coagulator and a new 58′ x 32′ filter bed. Six hundred cubic yards of concrete will be used for the coagulator, one hundred seventy cubic yards for the filter bed. A unique construction method will be employed for this job. The equivalent of approximately one hundred truck loads of concrete must be poured continuously to achieve monolithic form of the coagulator. Work is slated to start the early part of May, and the company estimates completion sixteen weeks afterwards.

## Two New Mills For Canada Rumored

Rumors are circulating that Canada may have two new pulp and paper mills before long. It is understood that studies are being made for the possible establishment of another mill in Manitoba, together with a mill in Saskatchewan. Both areas have the necessary transportation and natural resources for such new undertakings.

## Rourke-Eno Purchases Narragansett Paper

The Narragansett Paper Co., Providence, R. I. has been purchased by the Rourke-Eno Paper Co., Hartford, Conn..

George L. Ray, president of Rourke-Eno, will also become president of the Providence concern. Narragansett Paper will be operated as a wholly-owned subsidiary of the Hartford firm.

## Riegal Moves N. Y. Office

Riegal Paper Co. has moved from 342 Madison Ave. to new offices at 260 Madison Ave., New York, N. Y. The mail address remains the same, P. O. Box 170, Grand Central Station, New York, N. Y.


A.P.W.

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## Swiss Interests Study Prince Albert For Mill Site

OTTAWA — Swiss industrialists are understood to be investigating the possibility of establishing a pulp and paper enterprise near Saskatchewan's northernmost city, Prince Albert. This area of Canada has large timber sites as well as being the proposed site for a hydro development about 30 miles from the immediate vicinity.

The location is believed to be an ideal spot for an industry based on forest resources.

All of Powell River Co., Ltd.,'s anticipated 1952 newsprint production has been sold under contract.

## Fire Destroys Provincial Warehouse

A $100,000 fire destroyed the storage warehouse of the Provincial Paper Mill Co., Thorald, Ont. on April 25 but was halted before it could race into adjoining buildings. Four firemen suffered minor injuries.

Two volunteer brigades toiled for six hours before they brought the blaze under control.

## U. S. IMPORTS OF WOODPULP

**Preliminary, March, 1952**

| Item | Country of Origin | Short Tons |
|---|---|---|
| **Mechanical** | | |
| Unbldchd. | Canada | 16,966 |
| | Finland | 280 |
| | | 17,246 |
| Screenings | Canada | 338 |
| Bldchd. | Canada | 2,298 |
| **Chemical** | | |
| Sulfite, Unbldchd. | Canada | 29,733 |
| | Sweden | 632 |
| | Finland | 4,130 |
| | | 34,495 |
| Screenings | Canada | 360 |
| Sulfite, Bldchd. Rayon & Special Chem. Grades | Canada | 14,339 |
| Other | Canada | 20,786 |
| | Sweden | 2,203 |
| | Norway | 3,468 |
| | France | 28 |
| | Finland | 824 |
| | | 27,309 |
| Sulfate, Unbldchd. | Canada | 11,225 |
| | Sweden | 869 |
| | Finland | 823 |
| | | 12,917 |
| Sulfate, Bldchd. | Canada | 40,343 |
| | Sweden | 3,102 |
| | France | 11 |
| | | 43,456 |
| Soda, Bldchd. & Unbldchd. | Canada | 2,573 |
| **Totals, March** | Canada | 138,961 |
| | Finland | 6,057 |
| | Sweden | 6,806 |
| | Norway | 3,468 |
| | France | 39 |
| | | 155,331 |

## Warren Now Has 54 Members in 50-Year Club

S. D. Warren Co., Cumberland Mills has 54 members in its 50-year club as of April 23. The membership was increased by 7 on that date when John H. Milliken, jr., personnel director and Everett P. Ingalls, mill manager officiated at the honorary dinner and presented engraved gold watches and $100 in recognition of service. Honored were John Kinmond, Joseph M. Rousseau, Gilbert P. Welch, Arthur C. Peterson, Alexander Jones and Arthur A. Laffin all of the Westbrook Mill and Harold P. Kimball of the Gardiner Mill.

## Study Oregon Pulp Mill Possibility

J. M. White, president of Long-Bell Lumber Co. hinted at the establishment of a pulp mill in the Coos Bay, Ore., region in a talk before the local Chamber of Commerce.

Mr. White declared that "a resource that needs development is conversion of the waste in woods and sawmills to a pulp product." He feels there is no overproduction of pulp and there are new markets opening constantly.

Hinting at further development along this line, he stated "We are making studies with other owners and are discussing the matter." Later, he referred to the possibility of a combination to bring all waste products in chip form to a central pulp plant. "I can't promise a mill in this locality... there is plenty of water, but can it be in the right place?" Other comments on this matter were "It has possibilities; it needs study and it need capital.

## Dilts Coater on Owens Corning Fibreglas Laminator

A special Dilts 80″ adhesive applicator is now operating in conjunction with a new laminator at Owens Corning Fibreglas Co., Newark, Ohio.

The applicator is of kiss type design with open construction to provide for ease of control, threading and clean-up.

Since the coater is 80″ wide and foil presently is not produced in that width, provision is made for lap splicing two narrow widths of foil prior to coating in order to utilize the full width of the laminator.

In this machine foil or Saran webs are joined to various Owens Corning "Fibreglas" products with water soluble adhesives.

## Schedule Flights to Ocean Falls

The Queen Charlotte Airlines have recently announced that they will start a new scheduled flight to Ocean Falls from Vancouver, British Columbia. Departure from Vancouver will be every Thursday at 9:00 a. m.; arrival at 11:30 a. m. The same day the plane will leave Ocean Falls at 2:30 p. m., arriving in Vancouver at 5:00 p. m.

# BIRD SCREENS WITH DIRTEC TAILINGS UNITS

The modern and almost universally accepted* method of assuring *continuous production of uniformly good paper at maximum paper machine speed*

*Better than 90% of all the paper made in North America passes through Bird Screens

## BIRD MACHINE COMPANY

SOUTH WALPOLE • MASSACHUSETTS

# Kalamazoo Paper Standby Diesel Insures Operating Continuity

## One 865-hp. Engine Eliminates Utility Service, Guards Against Shutdown Of Mill, Helps Weekend Maintenance

One 865-hp. Worthington diesel is performing a vital service and saving money for the Kalamazoo Paper Co. in a huge plant where electric power costs are extremely low.

This mill, built in 1867, at Kalamazoo, Mich., was the first paper mill to be constructed in that center of paper manufacture. Today, it is one of the nation's major producers of book and coated papers with six big paper machines and two coating divisions. The large quantity of process steam required in paper making, makes it logical to use this steam in producing power. Consequently, the company uses steam turbines to provide its electric power. In all there are eight turbines with combined capacity of 20,000 kw. Process steam requirements exceed power needs and the turbines are in effect just reducing valves in the steam system. As a result, the cost of power is kept to a minimum.

For six days each week, the mill and its two power houses run a full schedule. On Sundays, activity is cut to a minimum and electric load drops as low as 1,000 kw. One boiler is kept fired and one turbine runs.

But all steam plant pumps and boiler fans are electrically-driven and the entire plant would be dead if the turbines stopped. Some other source of power would be essential to get the turbines started again. It is considered necessary, too, to have an alternate source of power capable of running the motor-driven fire pumps. Finally, it is customary on Sundays to do maintenance work on the paper machines and other mill equipment and it is efficient and convenient to have a power source which can be called into service to run one of the big machines as needed.

Kalamazoo management decided that a diesel would be the most economical and dependable means of providing standby power. Since competent operating personnel is on hand at all times, it was found to be considerably cheaper to install a diesel than to pay a power company for standby service. Mindful of the potential importance of the equipment, Kalamazoo Paper picked a heavy-duty prime mover. The engine chosen is a six cylinder, four-cycle Worthington diesel with exhaust-driven turbocharger, rated at 865 bhp. at 600 r.p.m. It drives a 600-kw., 3-phase, 60-cycle, 480-volt Electric Machinery synchronous generator with 7½-kw., 125 volt, V-belted exciter.

In emergency, if the turbines are down, the diesel is capable of handling the water pumps, boiler draft fans and the fire pumps. If called on to assist in plant maintenance, the engine can power the largest piece of machinery in the mill. The engine was tested and approved on July 7, 1951, and in the next two months received two calls for emergency service, one because of enforced shutdown of the turbines, one to permit boiler repairs. Whether needed or not, the diesel is run once a week to insure that it will always be ready for emergency.

Fuel economy is not a major consideration in an operation of this kind but it is interesting to note the efficiency that has been achieved. Chief Engineer Karl Hein reports that the engine averages 13.57 kw. hr. per gal. of fuel consumed. He reported one hour's run during which the diesel produced an even 500 kw. hr. on 33.3 gal. of fuel, no less than 15 kw. hr. per gal. The fuel used is a No. 1 oil, low in sulphur, which is delivered at 11.5 cents a gallon. Fuel is stored in a 12,000 gal. underground tank and is transferred by an automatic float-controlled motor-driven pump through a meter to a 300-gal. day tank in the engine room. The oil then flows to a booster pump on the engine which supplies the six injection pumps.

The engine cooling system also is fully automatic. Jacket water is circulated through the engine and a shell-and-tube heat exchanger by a 2½-in. centrifugal pump driven by a 7½-hp. motor. A thermostatic control maintains jacket temperature at the desired level by bypassing water around the exchanger. For makeup, a float-controlled valve in the surge tank admits distilled water from the boiler condensate supply as needed. The main pumps that provide filtered Kalamazoo River

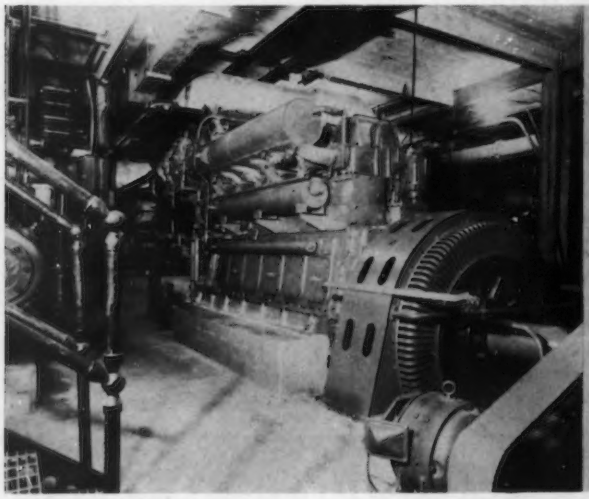
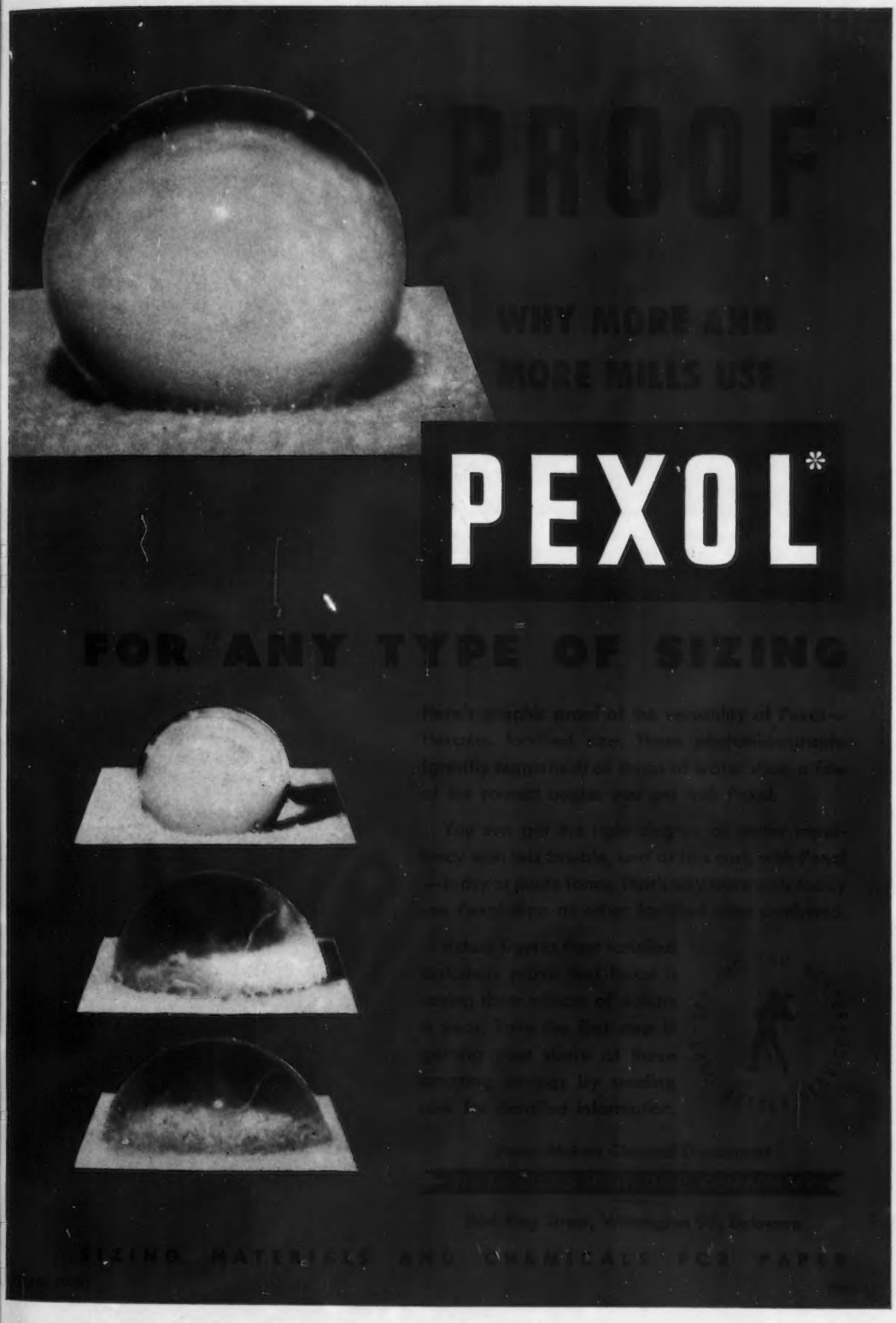
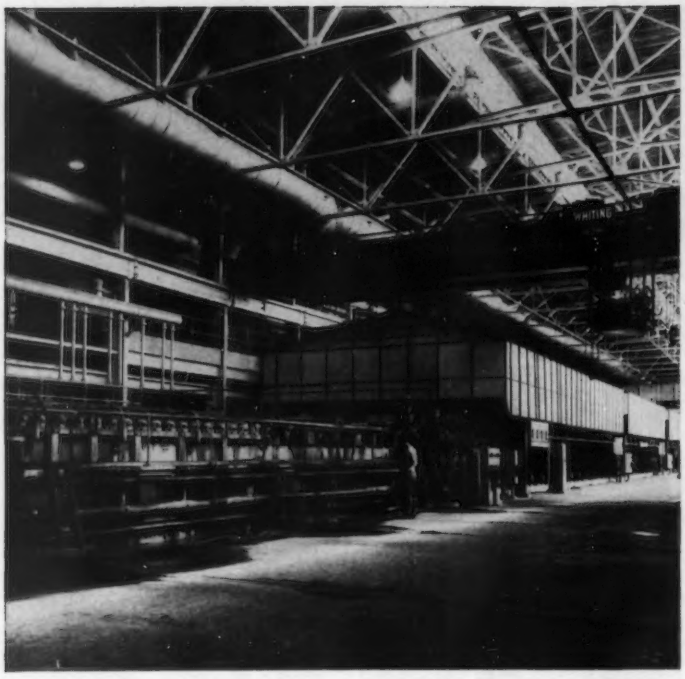
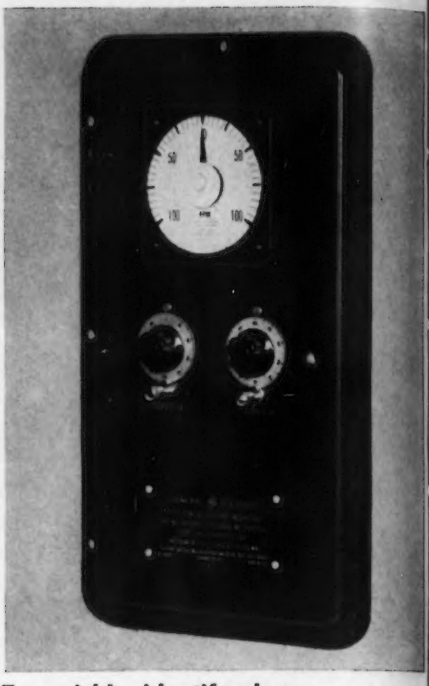


Figure 1—The Worthington diesel is a heavy-duty, 4-cycle, supercharged engine. This standby power unit was put into service in July, 1951, and already has been called on to meet emergencies when turbines were down. Figure 2—Starting air for the diesel is provided by a V-type Worthington compressor which can be driven either by electric motor or by a gasoline engine. The air tank at left is kept at 250 psi. so that air is always available for immediate starts.


PROOF
WHY MORE AND MORE MILLS USE
PEXOL*
FOR ANY TYPE OF SIZING



**New G-E draw indicator** can accurately measure speeds between adjacent wet-end sections. It is adjustable over a wide range of draw settings and paper speeds to simplify and speed start-ups and grade changes.



**To quickly identify draws** and simplify draw control, G-E draw indicators can be conveniently mounted on operator's control panels. Components are protected against dust and water.

# For more tonnage, tie

**One advantage** of a G-E electronic-amplidyne sectional drive is its adaptability to new production-boosting tools such as the draw indicator and the tensiometer. As other new devices are developed, they too can be incorporated.

**New G-E tensiometer** continuously indicates sheet tension, permits accurate control of tension regardless of paper-making variables.

**Light-weight, four-inch roller** on paper tensiometer head will not mark or damage finest paper. Tensiometer can be used with G-E sectional drives to hold sheet tension automatically.

# down draw and tension

## New G-E production instruments give paper-makers closer control of draw and tension for greater uniformity and fewer breaks

Now, to make draw and tension setting an exact science, General Electric offers two new instruments —the draw indicator and the paper tensiometer. For the first time, you can "tie down" draw measurements . . . find out optimum draw and tension values for all grades . . . repeat them every run. You get more saleable paper, less broke, lower production costs.

### Draw indicator helps you control wet-end draw

- Speeds sheet threading
- Reduces breaks at wet end
- Makes grade changes easier and quicker
- Reduces wraps at size presses and coaters

### Paper tensiometer helps you control dry-end tension

- Reduces snap-offs, wrinkles, calender cuts
- Will not damage sheet or interfere with threading
- Has fast response—works at highest machine speeds
- Permits tighter draws for faster, more uniform drying

Moreover, these two devices, in combination with any G-E electronic-amplidyne sectional drive, provide a system for complete instrumentation and fully-automatic control of draw and tension.

**Your G-E sales engineer** will be glad to tell you more about these two new instruments. Call your nearest G-E Apparatus Sales Office today. *General Electric Company, Schenectady 5, N. Y.* 655-11

**Engineered electric systems for paper mills**

**GENERAL ELECTRIC**

water for the mill send raw water through the engine heat exchanger and lube oil cooler. To make sure that no water circuit failure can put the engine out of service, the diesel has an emergency line to the mill's fire system water tower.

A detergent-type lubricating oil is used, pumped to the bearings by an engine-driven pump. Intake air is drawn through an oil-bath filter inside the building to the turbocharger. Exhaust gases drive the turbocharger and then vent through a vertical silencer in the room adjoining the engine room.

There is a convenient gauge panel on the engine with a multi-point exhaust pyrometer and pressure gauges on fuel, lube, water, starting air, turbo lube and turbo air. An alarm system warns in case of high jacket water temperature, low lube pressure or low jacket water pressure.

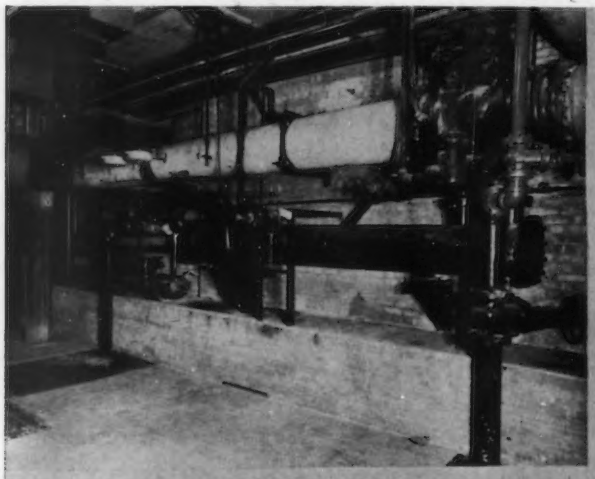
Since the engine would be needed most urgently if no electricity were available, the starting air compressor is provided with alternate drives — a gasoline engine in addition to the usual electric motor. The air tank, of course, is kept at full pressure (250 psi.) so that air is ready for instant starts.

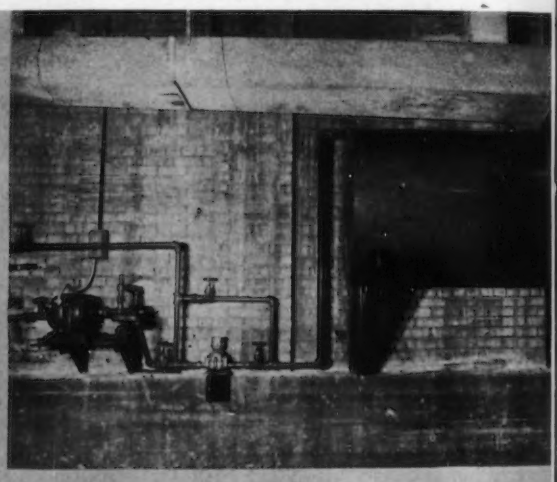
In a mill the size and importance of the Kalamazoo Paper Co. installation, continuity of operation is of utmost importance. Company President G. T. Jubb and Vice-President B. H. Cooper have decreed that power supply must be assured by a dependable standby service. Superintendent of Power and Maintenance T. R. Walter and Chief Engineer Hein feel that their diesel provides this power insurance.

The company has no utility line of any kind and even if the diesel did not run at all, it would be saving money in standby charges. Actually, the engine has been called on to perform its primary functions, to operate steam plant auxiliaries in emergency and to provide power for week-end mill maintenance. It is hard to put a price on such services except to say that they are essential.

## Equipment Suppliers

Engine: 865 hp., 600 rpm., 4 cycle, supercharged. Size SDH-6 diesel. Worthington Corp.
Generator: 750 kva., 600 kw., 480 volt, 3 phase, 60 cycle, synchronous generator with 7½ kw., 125 volt exciter. Electric Machinery Corp.
Governor: Woodward Governor Co.
Turbocharger: Elliott-Buchi. Elliott Co.
Fuel oil: Standard Oil Co. (Ind.)
Fuel transfer pump: Worthington Corp.
Fuel meter: Worthington-Gamon.
Lubricating oil: Texaco Ursa P 40. The Texas Co.
Lube filter: Cuno Engineering Corp.
Lube cooler: Sims Co.
Cooling water pump: Worthington Corp.
Heat exchanger: Sims Co.
Thermostatic valve: Fulton Sylphon Div.
Starting air compressor: Worthington Corp.
Air filter: Air Maze Corp.
Exhaust silencer: Maxim Silencer Co.
Exhaust pyrometer: Alnor. Illinois Testing Laboratories, Inc.
Alarm system: Viking.
Gauges: James P. Marsh.





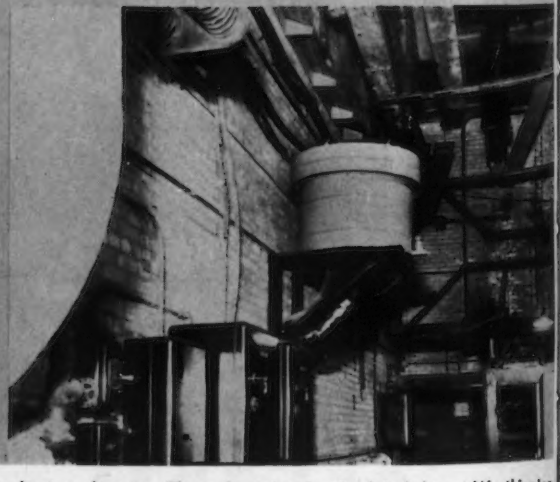


**Figure 3—Lube oil is cooled in a Sims oil cooler, jacket water in a Sims heat exchanger. The soft water is circulated by a Worthington monobloc pump. Figure 4—Fuel oil is pumped from storage by a motor-driven Worthington rotary pump through a Worthington-Gamon meter to the day tank in the engine room. Figure 5—Exhaust gases vent through a Maxim silencer in the room adjoining the engine room. Figure 6—Engine air is drawn through an Air-Maze oil-bath filter located in a room adjoining the engine room.**

# AIRWAYS——————

# RAILWAYS——————

# HIGHWAYS——————

## Lead To The Sheraton-Cadillac Hotel,

DETROIT, MICHIGAN

## For The 33rd Annual Convention

*of*

## The American Pulp and Paper Mill Superintendents Association

## June 17-19, 1952

Program will be novel — something for everybody — many interesting papers on important subjects — plant visits — and unusual entertainment.

**THE AMERICAN PULP AND PAPER MILL SUPERINTENDENTS ASSOCIATION**

111 West Washington Street

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# GOVERNMENT GOSPEL

### Rule 41 Changes

Supplement No. 13 to Consolidated Freight Classification No. 20, issued April 15 and effective May 26, contains a number of changes in Rule 41, covering corrugated and solid fibre boxes, particularly in connection with the sealing of boxes by means of tape, gluing, or the relatively new interlocking flanged ends; provides for a reduction in the width of the flap of glued lap-joint boxes; treats with the status of boxes made under the new Uniform Classification; and contains certain other changes of interest. The changes are discussed below.

There are several changes in Section 5 (b), some of which are technical changes involving clarification of the kinds of board specified for inner packing for filled glass or earthenware containers. However, one important change is permission for use of pads or partitions for containers holding filled glass or earthenware containers with net weights of 25 oz. to 45 oz., which pads or partitions may be made of two thicknesses of .024 solid fibreboard.

Important changes in Section 7, covering sealing of slotted boxes and double-wall boxes, provide for use of a paper tape reinforced with sisal fibres, and also provide for new methods of sealing by use of machine-glazed kraft paper inserts. The methods of sealing by means of M.G. kraft inserts would permit the gluing of 30 lb. M.G. kraft paper to the inner and outer flaps, with the flaps then closed by means of 18 adhesive spots, equally distributed and covering not less than 22 percent of the area of contact. Obviously, this latter method of sealing is intended for situations where it will be easy to open the container without tearing the flaps and then reseal it for re-use.

Changes in Section 8, relating to the sealing of telescope boxes or boxes with covers extending over the sides, provide for clarification of the fact that filament reinforced tapes for closures must have filaments embedded in elastic rubber base adhesives, and also provide new specifications to cover boxes with separate covers that are closed by means of flanges on the covers and the bodies. The specifications on boxes closed by means of flanges provide that the flanges on the body and covers must be not less than 3″ wide, arranged so that the flanges on the covers fold down over and back under the flanges of the body, with the closure assembly then securely metal strapped. Such flange types of closures have seen widened use in the past few years in the packing of stoves, radios, and many other home appliances, and other heavy articles where the method employed not only furnishes closure, but furnishes a reinforced and recessed end that has protection features.

An important change in Section 11, in connection with the development of the so-called glued lap for making the manufacturers joint, is a reduction in the specified width from the former 1½″ to a newly-specified 1¼″.

The final change of importance is the introduction of Section 13, which now permits boxes made under and bearing the certificates specified for the new Uniform Freight Classification No. 1 to be accepted in lieu of the certificates required by Section 9 of Rule 41 of the Consolidated Freight Classification.

### Asks Tailored Ceilings on Coated Paper

WASHINGTON, D.C. — A proposed tailored ceiling price regulation for coated and processed paper has been discussed by members of the industry and the OPS.

The regulation provides that with some limitations, ceilings be determined by the same pricing formulas manufacturers used between January 1 to March 31, 1951.

OPS estimated that adoption of the new regulation will amount to an average four percent increase in ceilings frozen under the General Ceiling Price Regulation.

### To Rehabilitate Formosa Mill

Mutual Security Agency has announced that it has allocated $782,000 for commodities for the rehabilitation of the Hsin Ying Paper Mill, located in Formosa. The sources for material are designated as U.S.A. and Possessions, U. K., France, Italy, Germany, Belgium, Netherlands and Japan. The contract period is April 25 to October 31, 1952, and the terminal delivery date is October 31, 1953.

### Steel Embargo

An immediate embargo on shipments of steel to exporters and manufacturers of consumer durable goods to preserve existing supplies for vital defense production was ordered by NPA, following announcement of a work stoppage in the industry.

NPA Administrator Henry H. Fowler, announcing the freeze, said it applies to all steel products in warehouses. It does not apply to shipments by mills. The new Direction, No. 11 to CMP Reg. 1, embodies action recently taken in Directions 10 and 10A to CMP Reg. 1, which were revoked on April 11, 1952.

Specifically, Direction 11 provides that, from the effective date until a date to be stated in an amendment to or by revocation of the Direction, no person shall accept delivery of steel in the forms and shapes indicated in Schedule 1 of CMP Reg. 1, from any source other than a controlled material producer, except steel which was in transit to him or for his account on the effective date of this direction, if such steel was (a) ordered pursuant to an authorized controlled material order bearing the program identification V followed by a digit, or (b) is to be used in the manufacture of products pursuant to authorized production schedules bearing the program identification V followed by a digit, or (c) was ordered for export, or is to be exported, outside the United States, its territories and possessions.

No person is permitted to make shipment of such steel, if he knows, or has reason to believe, that its acceptance will constitute a violation of the foregoing provisions.

The symbol V followed by a numeral, identifies materials used in the production of consumer durable goods.

### Copper Losses Charged to IMC

WASHINGTON, D. C. — The International Materials Conference was charged with having "short-changed" U. S. copper consumers out of 214,000 tons of copper per year, in a statement by eight Republican members of the House of Representatives this week.

The charges were made in a statement to House Republican Majority Leader Martin, and was headed by Rep. Sadlack, of Connecticut. The survey of copper losses was directed primarily to the electrical industry, but covered various others.

### Canadian Exports

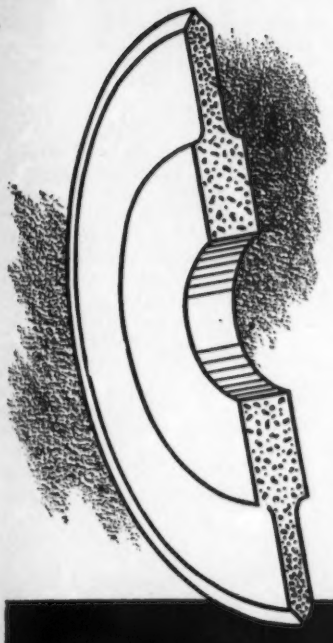
OTTAWA—Canadian Government announces exports of wood pulp from this country advanced to $32,871,000 during March as against $27,239,000 in same month last year and reached a cumulative total for first quarter of 1952 of $93,736,000 as against $72,799,000 in the corresponding period of 1951.

Similarly, exports from Canada of newsprint increased to $48,290,000 during March this year as compared with $43,274,000 in March a year ago and totaled $139,917,000 during the first three months of this year as against $119,807,000 in same period a year ago. Exports of other paper rose to $3,802,000 in March as against $2,866,000 in same month last year and totaled $10,573,000 in first quarter of this year as compared with $8,357,000 last year in the corresponding period.

### WSB Rules on Paid Sick Leaves

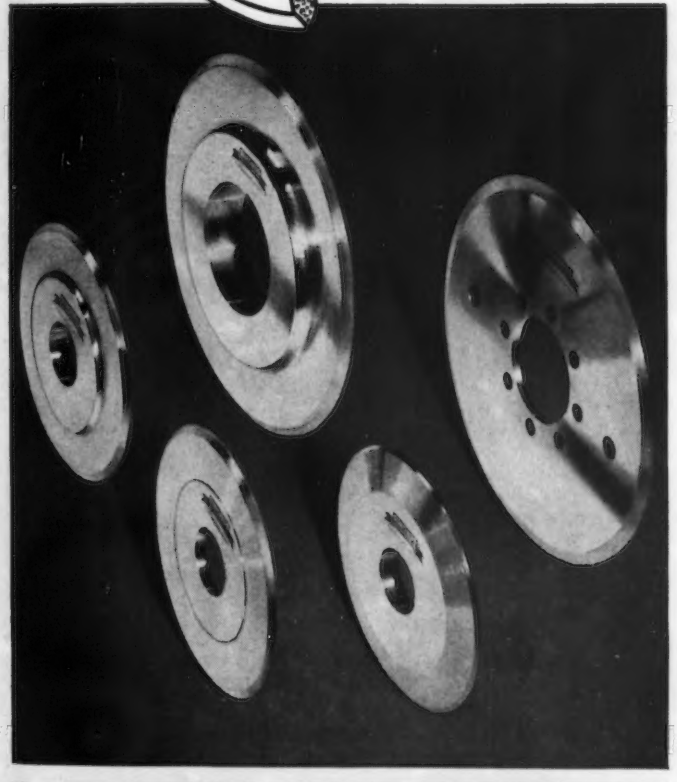
The Wage Stabilization Board has announced the method of processing petitions for paid sick leave plans, following a determination by the Board that such plans should not be considered under General Wage Regulation 13, but like health and welfare plans should be acted upon by the Health and Welfare Committee.

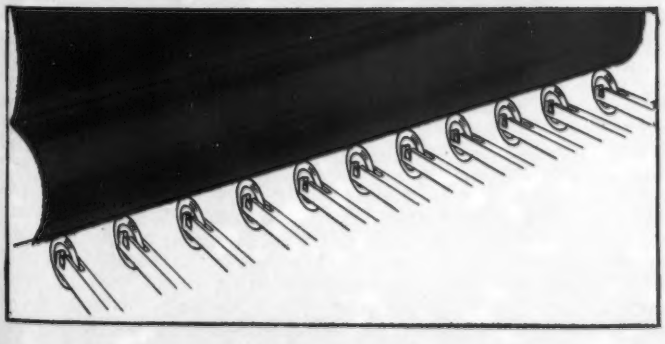
Requests for approval of paid sick leave plans will, therefore, be referred to this committee, a tripartite body established by the Board to act on petitions for approval of health and welfare plans which are not automatically approvable under General Wage Regulation 19.



# Forged!

## that's why RED STREAK SLITTERS last longer on every Slitting Job





Simonds Slitters are made from *forgings*... which give a dense and uniform grain structure around the slitter rim. And there's where you get the *toughness* that gives you the longer lasting edge.

So if you're shooting for "high score" on score-cutting, then Simonds "Red Streaks" are the slitters for *you.* These forged slitters are tough enough not to flatten out, and hard enough to keep their keen cutting edges far longer.

And that's not all: Simonds special heat-treating and precision grinding methods add up to longer life between grinds, which means highest production per machine, and lowest slitting cost. So ask your Simonds Distributor about "Red Streak" Forged Slitters in all standard sizes.

**SIMONDS SAW AND STEEL CO.**

**FITCHBURG, MASS.**

*Factory Branches in Boston, Chicago, San Francisco and Portland, Ore. Canadian Factory in Montreal, Que.*

All requests for paid sick leave plans, whether new or amended, must be filed on WSB Form 501, in duplicate, with the Wage Stabilization Board, Washington 25, D. C. This special form was developed for use by the Board for requests for health and welfare plans.

Form 501 should be filled out completely by petitioners. Details of the proposed plan should be presented in a supplementary statement which should also include justification for the requested sick leave plan. Specific citations of practice in the petitioner's industry or area should be given. Past company practice, collective bargaining patterns and history with respect to the plan, and any additional relevant factors should be set forth in the statement.

A guide list for the use of petitioners in filing request for paid sick leave plans will be available in about three weeks at local offices of the Wage and Hour Division, Department of Labor and at Regional Wage Stabilization Board Offices.

### Germany's Tall Oil Requirements

WASHINGTON, D. C.—German industrial requirements for tall oil are estimated at around 7,000 tons.

A survey of the German Republic's naval stores needs states that plastics takes between 7,000 and 9,000 metric tons of rosin annually, divided about 60 percent gum and 40 percent wood. About 3,000 to 4,000 tons of tall oil are used in this industry, an American report states.

### Start Production of Formaldehyde Resins

WASHINGTON, D. C. — Operations at a new Canadian plant at St. Therese, Quebec, producing urea-formaldehyde and phenol-formaldehyde resins for the paper and plywood industries, were scheduled to begin last month, an American report to this government states.

### Ceiling on Puerto Rican Paper Products

CPR-143, effective May 10, establishes ceilings for sales in Puerto Rico of wrap tissue paper, standard wrapping paper and grocers' and variety paper bags.

### Britain To Reduce Newsprint Price

LONDON, England—For the first time since World War II, the maximum price of newsprint produced in Britain will be reduced by just over $8, starting May 19, the Ministry of Materials announced May 10.

The entire publishing industry will benefit from reductions in the maximum price of other grades of printing paper, ranging from $19.95 to $66.15 a ton. The present controlled price of newsprint is $187.43.

The ministry said lower prices of imported woodpulp made the reduction possible.

### Canada's Newsprint Export Situation

MONTREAL, Que. — R. M. Fowler, Canada's newsprint administrator, said any increase in newsprint supplies for Europe would depend upon a number of factors.

Mr. Fowler was commenting on a Geneva dispatch which said the timber division of the United Nations Economic Commission for Europe announced there would be greater supplies because of increased production stimulated by scarcities.

Canada and Finland were named especially as having expanded their pulpwood industries.

Mr. Fowler said it is a basic fact that there has been increased production but disposition of larger supplies, so far as Canada is concerned, is something else.

Disposition would depend on such factors as contract commitments, company policies and availability of dollars to purchase supplies. If a company is under contract to sell its supply to North American concerns, for instance, none could be sent to Europe.

### Canada Removes Credit Restrictions

OTTAWA—Canadian Government has removed consumer credit restrictions which have been imposed since November, 1950, with this following a belief in official quarters that Canada is winning the battle against inflation because the official cost-of-living index has been declining steadily for the past three consecutive months for the first time since the fall of 1949.

As a result of this official action, it is expected that the paper trade may benefit indirectly in the coming months.

## Fighting Paper Wanted

Invitations for Bids have been issued by the New York Quartermaster Procurement Agency, 111 E. 16th Street, New York 3, N. Y., on QM-30-280-52-1730, covering Paper, book, offset, 880 rolls. Bids will be opened May 27, 1952, at 1:00 p.m. (EDST) at the New York office. This procurement is for the U. S. Air Force.

QM-30-280-52-1729, covering Paper, book, chemical wood, uncoated, machine finish, 800 reams. Bids will be opened May 27, 1952, at 1:00 p.m. (EDST) at the New York office. This procurement is for the U. S. Navy.

QM-30-280-52-1716, covering Tape, masking, paper (pressure sensitive), 754,640 rolls; and Tape, mending, cellulose (pressure sensitive), 223,100 rolls. Bids will be opened May 26, 1952, at 4:00 p.m. (EDST) at the New York office. This procurement is for the U. S. Navy.

QM-30-280-52-1707, covering Paper, wrapping, kraft, 1,800 rolls; and Bags, interior packaging, 690,000 each; and Barrier Material, greaseproof, 5,500 rolls. Bids will be opened May 26, 1952, at 2:00 p.m. (EDST) at the New York office. This procurement is for the U. S. Army.

QM-30-280-52-1721, covering Paper, waxed, shredded, 100,000 lbs. Bids will be opened May 27, 1952, at 2:00 p.m. (EDST) at the New York office. This procurement is for the U. S. Army.

QM-30-280-52-1711, covering Fiberboard, corrugated, 38,000 sheets. Bids will be opened May 26, 1952, at 3:00 p.m. (EDST) at the New York office. This procurement is for the U. S. Army.

QM-30-280-52-1690, covering Paper, toilet tissue, crushed, 1000 sheets per roll, 3,186,000 rolls. Bids will be opened June 5, 1952, at 2:00 p.m. (EDST) at the New York office. This procurement is for the U. S. Navy.

QM-30-280-52-1710, covering Wadding, cellulose, various, non-absorbent, 31,557 rolls. Bids will be opened May 28, 1952, at 10:00 a.m. (EDST) at the New York office. This procurement is for the U. S. Navy and Marine Corps.

QM-30-280-52-1736, covering Paper, drawing, various, 3,736 rolls and 12,400 sheets; and Paper, tracing, 100 percent rag, white grained surface, 750 rolls. Bids will be opened May 26, 1952, at 2:00 p.m. (EDST) at the New York office. This procurement is for the U. S. Air Force.

QM-30-280-52-1733, covering Paper, cover, chemical wood, 502,400 sheets. Bids will be opened June 10, 1952, at 2:00 p.m. (EDST) at the New York office. This procurement is for the U. S. Air Force.

QM-30-280-52-1745, covering Tape, paper, kraft, gummed, 162,561 rolls. Bids will be opened May 26, 1952, at 11:00 a.m. (EDST) at the New York office. This procurement is for the U. S. Army and Navy.

QM-30-280-52-1748, covering Paper, manifold, 25 percent rag, 7,600 reams. Bids will be opened June 10, 1952, at 3:00 p.m. (EDST) at the New York office. This procurement is for the U. S. Air Force.

QM-30-280-52-1611, covering Bags, Paper, Kraft, (Wet Strength), 400,000 each. Bids will be opened May 19, 1952 at 3:00 P.M. (EDST) at the New York Office. This procurement is for the U. S. Navy.

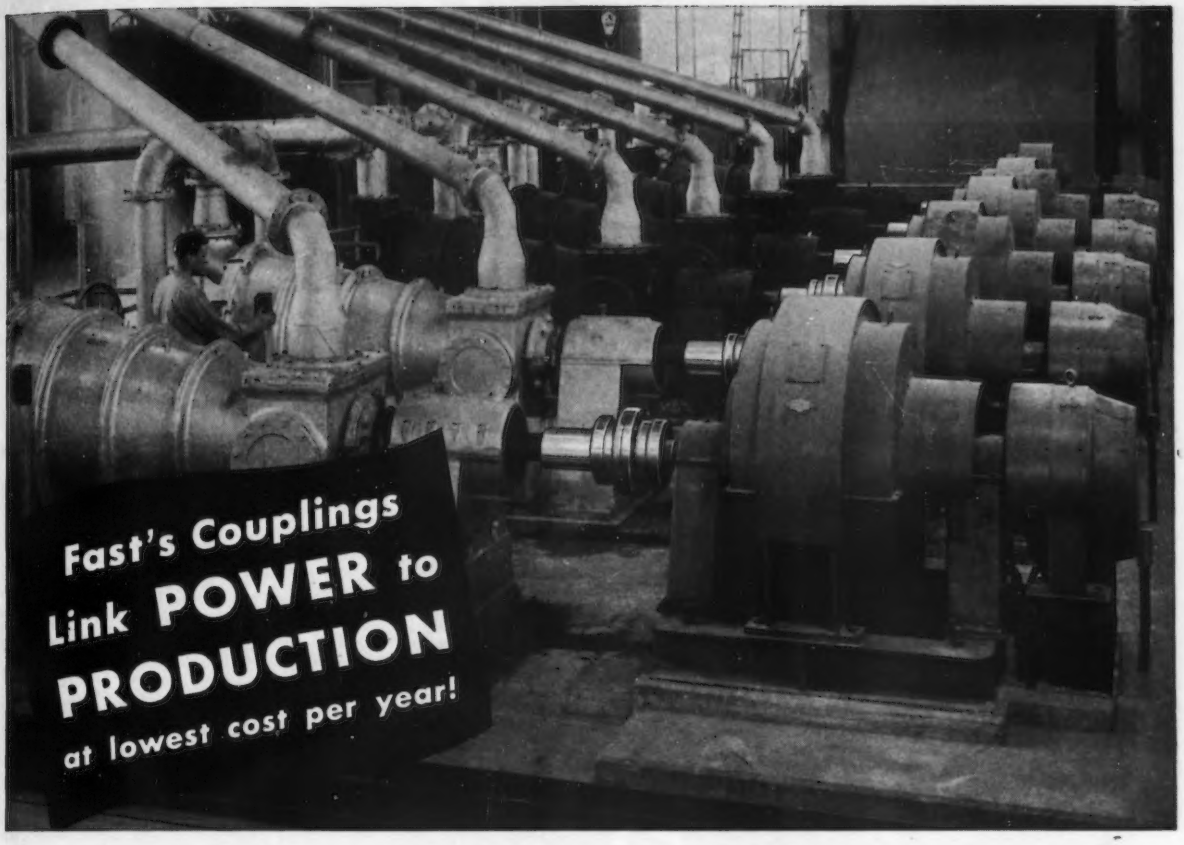
QM-30-280-52-1678, covering Towels, Paper, Single-Fold, 2,601,125 pkgs. Bids will be opened May 20, 1952 at 4:00 P.M. (EDST) at the New York Office. This procurement is for the U. S. Air Force.

## United Wallpaper Manufactures Colors

United Wallpaper, Inc., has created a new division for the manufacture of colors as the first step in its recently announced diversification program, according to William H. Yates, president.

Curt T. Vebel has been named general sales manager of the new division, Thomas A. McCormick has been appointed chief chemist, and John W. Close, director of technical service.

The new division is already in production at United's Aurora, Ill., plant, manufacturing a full line of colors for paper coatings, wallpapers, and rubber base or latex type paints.

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When you specify Fast's, Koppers Engineering Service assures you the *right* coupling for *every* job . . . protecting your paper mill drives against costly and needless coupling failures. And this dependable, trouble-free service pays off in *lowest coupling cost per year!*

For detailed information, photographs and specifications, write today for your free Fast's catalog to: KOPPERS COMPANY, INC., *Fast's Coupling Dept.,* Scott St., Baltimore 3, Md.

## Here's How FAST'S Save You Money

***Free Service***—Koppers free engineering service assures you the right coupling for the job.

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*Gentlemen: Send me Fast's Catalog which gives detailed descriptions, engineering drawings, capacity tables and photographs.*

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# The Design of Power Plants for the Pulp and Paper Industry

**A. R. M. Johnson**

Project Engineer, Australian Paper Manufacturers Ltd.

## Summary

*Some general figures are given of the steam and power usage in the manufacture of pulp and paper, the advantages of the combined heating and power station are briefly noted, and the major combinations of boilers and prime movers discussed. Details of some turbo-alternators in use in Australian mills are listed. Performance charts which indicate the desirable condenser capacity are described and the effect of increased cooling water temperature is treated in some detail. Finally, the power loss due to increasing the turbine extraction pressure is considered in relation to the installation of further driers.*

## Introduction

The manufacture of pulp and paper requires considerable quantities of steam for evaporation, heating and drying, as well as large amounts of power for driving such units as chippers, grinders, pumps, beaters, refiners and paper machines. The efficient design of the power plants is therefore of considerable importance in the economic processing of the raw materials, in ensuring long periods of continuous operation and in reducing maintenance to a minimum.

In the manufacture of any particular type of pulp or paper there is a fairly definite relationship between the quantities of steam and power required and, under normal running conditions, there is comparatively little variation in the rates of these quantities. This is due to the fact that many of the unit processes are continuous while those which are batch are usually carried out in a number of units so that there is reasonable spreading of the load. As a result the design of power plants for our industry is somewhat simpler than in certain others where large quantities of heat or power are required at irregular intervals.

As another paper (1) at this conference will deal with boilers and fuels, no mention is made of these important subjects.

Presented at the 4th General Conference of the Australian Pulp & Paper Industry Technical Assn. in Melbourne.

## Steam and Power Usage

*Table I* shows the average steam and power usage for the manufacture of chemical pulp, paper and board.

TABLE I
AVERAGE STEAM AND POWER USAGE

| | Steam lb./ton | Power kw.hr./ton |
|---|---|---|
| Chemical pulp ..... | 8,000-10,000 | 250- 350 |
| Paper ..... | 6,000- 9,000 | 700-1,000 |
| Board ..... | 9,000-12,000 | 500- 700 |

In the manufacture of pulp, approximately half the steam usage is at 130 to 150 lb./sq.in. for digester heating, the remainder being used at 40 to 50 lb./sq.in. for concentrating black liquor in multiple-effect evaporators. The power usage is for chippers and various other drives such as of pumps, conveyors, washers, etc.

In paper and board manufacture the steam for drying is usually at a pressure of 15 to 50 lb./sq.in. The machine driers are comparatively inefficient as water removers because 1.5 to 3 lb. of steam are required to remove 1 lb. of water from the sheet. For comparison a multiple-effect evaporator will evaporate 4 to 5 lb. of water for the use of 1 lb. of steam, i.e., the evaporator is some ten times as efficient as the paper machine dryer. However, one of the great advantages of steam heating is that the temperature can be held constant merely by holding the pressure constant. The power used in paper and board manufacture is mainly for driving beaters and refiners in the preparation department.

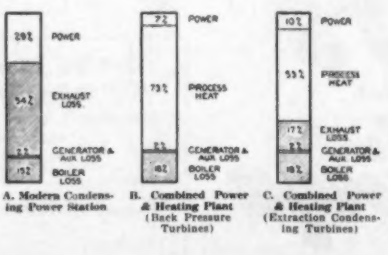


**Figure 1.—Comparison of energy distributions in power stations**

## Combined Power and Heating Station

Steam in a paper and board mill is required usually at 15 to 50 lb./sq.in. and it is obvious that by generating at a higher pressure it is possible to use the steam to drive turbo-alternators and so to obtain part or all of the electric power required in the mill. The combination of a heat and power station can be a very economical one compared with the normal electric power generating station where most of the heat of the fuel is lost in the condenser cooling water.

The block diagrams of *Figure 1* give a visual comparison of the relative efficiencies of a modern condensing station and two types of combined heat and power station. *Diagram A*, which incidentally is of a very efficient condensing station, shows that 29 percent of the heat in the coal appears as electrical energy while 54 percent is lost as low grade heat in the condenser water. Few power stations in the world are as efficient as the one shown here; the normal one giving only a net 20 to 25 percent of electrical energy.

*Diagram B* shows a combined heating and power plant which uses back-pressure turbines from which it will be noted that while only, say, 7 percent of the heat is converted to electric power 73 percent is available for process heating.

*Diagram C* is similar to *B* except that the turbines considered are the extraction-condensing type and shows that 10 percent of the heat in the coal appears as electric power, that 53 percent is available in the process steam, and that the total losses are only 37 percent.

From these figures it will be seen that by raising the steam at a higher pressure than is required by the process it is possible to generate a considerable amount of power and to have a station which is 60 to 80 percent efficient compared with a normal power station efficiency of 20 to 30 percent.

## Steam and Power Distribution in a Pulp and Paper Mill

*Figure 2* shows the estimated future steam and power distribution in a pulp

# Stronger paper

**Hydroseal** gives you increased—

- **Mullen**
- **Fold**
- **Tear**
- **Pick**
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**Hydroseal** beater additive requires no preparation. It's a cold water swelling starch that is added directly to the beater in dry form.

**Hydroseal** improves formation and scuff resistance of the sheet, and improves greaseproofness of glassine. It cuts white water losses by increasing retention of fillers and fines, lays fuzz, and gives a better surface.

**Hydroseal** gives you better retention of starch in the sheet, too. And it's versatile—works in all types of paper from high grade bond and book papers to Kraft. For example, it improves the Mullen and formation of ledger paper and increases the flat crush of corrugating medium.

For further information or technical assistance, clip and mail the coupon.

**Effect of 2% HYDROSEAL Addition**
**(Bleached Sulfite Stock)**

National STARCH PRODUCTS

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**I'd like to see how HYDROSEAL works.**

Please send ☐ Technical data ☐ Laboratory sample

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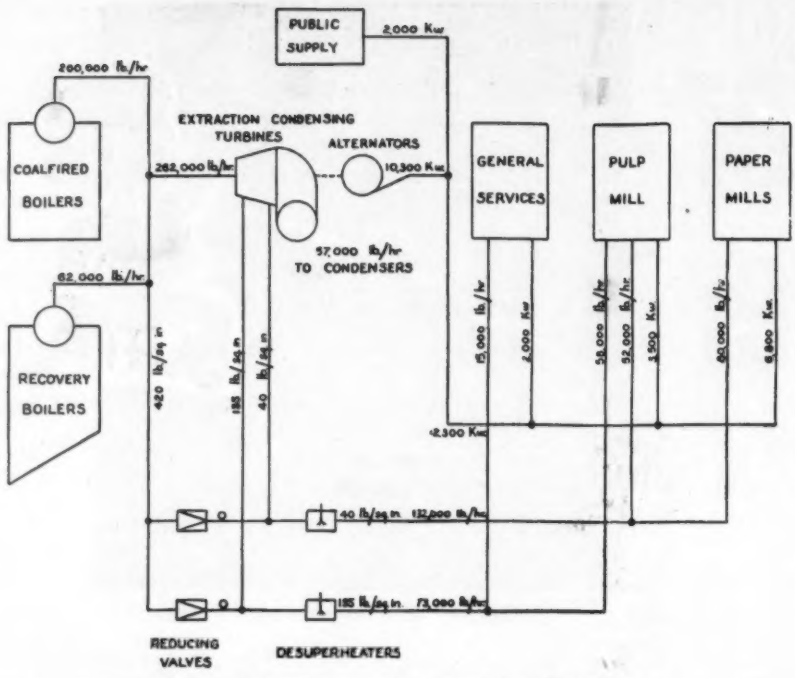


Figure 2.—Pulp and paper mill steam and power distribution

and paper mill which is at present undergoing considerable expansion.

In this particular mill the steam generating conditions are 420 lb./sq.in. and 720°F. and it will be noted that the recovery furnaces which burn the black liquor from the pulping process produce about 25 percent of the total steam requirements, the remainder being obtained from coal-fired boilers.

The steam from all the boilers passes to the turbines which are provided with extraction valves so that steam can be drawn off at 135 lb./sq. in. and 40 lb./sq.in. and are also fitted with condensers so that electric power can be generated by steam direct to the condenser. This makes for a very flexible arrangement in that changes in power load without change in process steam load can be accommodated by varying the quantity of steam passing to the condensers.

The turbine shown on the diagram in actual fact represents five substantially similar extraction - condensing turbines, but an equally satisfactory arrangement can be obtained by using back-pressure extraction and condensing turbines. In fact, the latter could be somewhat more efficient but would not lend itself to a convenient range of spare parts.

## Combinations of Boilers and Prime Movers

*Table II* shows briefly the major combinations of boilers and prime movers.

### Boilers with Back Pressure Turbo-alternators Operating in Parallel with the Public Supply

It is obvious that back-pressure turbines alone can only be used when the ratio of power and process steam is as designed, and any variation from this will result in either an excess of steam or an excess of power being available. It is therefore necessary to parallel with some external source of power so that varying loads can be drawn. The steam generated will then be only the process steam required and any power needed in excess of that generated by the process steam will be drawn from the public supply. Under normal conditions it can probably be arranged so that a comparatively small proportion of the power used is provided by the public supply but there will be times, particularly during starting up, when a considerable amount of power is required and very little process steam; e.g., it is very often desirable to run the preparation plant, i.e., beaters and refiners some time before the paper machine is started up. It is therefore clear that the public supply installation capacity must be considerably larger than the average load would indicate. However, this combination of back-pressure turbine and boiler is theoretically the most economic arrangement.

TABLE II
COMBINATIONS OF BOILERS AND PRIME MOVERS

1. Boilers with back-pressure turbo-alternators operating in parallel with the public supply.
   Very efficient.
2. Boilers with extraction-condensing turbo-alternators.
   Flexible and efficient.
3. Boilers for process steam only and power from the public supply.
   Boilers fuel-fired or electric.
   Only used if fuel is expensive and power cheap.
4. Boilers and back-pressure engine. Oil in condensate is a problem.
   Inconvenient.

In the past certain of the public supply authorities have been loth to parallel with industrial generating systems. This was probably because of the fact that industrial plant has not always had first-class equipment or competent men to operate it. This certainly does not apply to the pulp and paper industry and the public supply authorities are recognizing it; in fact, because of the general shortage of power-generating equipment, the governmental instrumentalities responsible for power supply are encouraging private enterprise to generate more power and thus to help bridge the gap. It is obvious that the more efficiently the limited coal resources of the country can be used, the better it will be for all concerned.

### Boilers and Extraction-condensing Turbo-Alternators

This gives a very flexible system in that the power load relative to process steam load is accommodated by varying the steam to the condenser. The whole mill requirements can be met or some power may be drawn from the public supply. The capacity of the condensing section is dealt with under turbo-alternators.

### Boilers for Process Steam Only and Power from the Public Supply

This is normally uneconomical as no use is made of the high efficiency which can be obtained from a combined power and heating station. However, it may be desirable where cheap (e.g., hydro - electric) power is available and fuel is expensive or where it is not desired to incur the large capital cost of high - pressure boilers and turbo-alternators.

### Boilers and Back-Pressure Steam Reciprocating Engines

Before the advent of turbines this was the normal method of operating pulp and paper mills and is still in use in a number of old mills. The two main disadvantages are the risk of contamination of condensate with lubricating oil, which is likely to deposit on the internal surfaces of drier cylinders and ultimately of the boilers, and the inconvenience of having engines scattered throughout the mill with the necessary steam pipes for operating, and exhaust steam. The many other disadvantages such as the necessity for employing numerous engine drivers, line shafting and engine maintenance and space requirements will be obvious.

## Turbo-Alternators

Except for one mill in Tasmania all the turbines in normal use in the Australian industry are extraction - condensing or straight-condensing types. Some details are given in *Table III*.

It will be noted that the maximum load with no extraction is considerably less than the alternator capacity — 2,500 kw. as compared with 3,500 kw. in the majority of cases tabulated.

RIGHT IN YOUR OWN BACK YARD... BY WEST

TO HEAR DIEHARD TELL IT, NO INSECTICIDE COULD DO THE JOB IN HIS PLANT··· UNTIL··· YOU GUESSED IT··· HE TRIED "DOUBLE PENETRATION!"
SNA-FOOD KOMPANY
HEY, BOSS, HAVEN'T FOUND A TRACE OF WILD LIFE SINCE LAST WEEKS FOGGING WITH VAPOSECTOR!
H'MM! I'M BUGS, IF VAPOSECTOR DOESN'T DO THE TRICK!
HERE'S THE COST SHEET, BOSS-- 12,000 CUBIC FT. HERE··· SO IT ONLY COST US A BUCK TO FOG THIS WHOLE DEPARTMENT WITH OUR WEST ATOMIZERS!
THEM'S NOT BUGS··· THEY'RE POPPY SEEDS FROM SOMEBODY'S LUNCH-BOX
WHY TEAR UP THE FLOORBOARDS? I CAN'T EVEN HEAR A FADING HEART-BEAT!
REMEMBER THE FIRST VAPOSECTOR DEMONSTRATION? IT POSITIVELY RAINED INSECTS!
I WAS ITCHING TO TELL YOU THAT!
NO SMELL, NO STAIN, NO AFTERTASTE··· VAPOSECTOR QUALIFIES HERE, CHIEF!

**DIEHARD'S CASE ISN'T SO UNUSUAL AFTER ALL!** In all types of industry West representatives hear comments like "our situation is a special one" . . . "an insecticide is bound to impair the quality of our product" . . . and – stranger still – "we don't have any insect problem here!"

**VAPOSECTOR** was formulated for the realist who *has* an insect problem and wants to get rid of it – fast! It's fully three times as concentrated as the standard Grade AA spray . . . yet there's no danger of contamination or odor when used according to directions. Vaposector controls insects by "double penetration". When used with West spraying equipment, it becomes a "dry fog" that *penetrates* the most remote crevice . . . then *penetrates* the insect's outer covering for a permanent kill. There's no place to hide. No time to escape. A Vaposector demonstration has often revealed dead insects in numbers never thought possible – simply because they live and multiply in unseen cracks and crevices.

**VAPOSECTOR** gives more positive control value per gallon than any competitive product. It breaks down into such minute droplets when atomized with specially-designed West equipment, that only one ounce is needed to control flying insects in 1000 cubic feet . . . only two ounces for crawling insects. Compare it with an ordinary mill spray and you'll find Vaposector is over *four times as economical in use!* West can supply Vaposector as well as special mill sprays and fumigants . . . residual and contact insecticides . . . spraying equipment – a *complete insect control program* tailored to your exact needs!

WEST DISINFECTING Company

42-16 West Street
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ASK FOR FURTHER INFORMATION ON HOW TO CONTROL INSECTS BY "DOUBLE-PENETRATION"

Dept. 43

☐ Please send Vaposector booklet.

Please send information on specially-designed permanent ☐, portable ☐, hand spraying ☐ equipment

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Company_____

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City_____ Zone_____ State_____

TABLE III

TURBO-ALTERNATORS

| Type | Single-extraction condensing direct-coupled | Single-extraction condensing direct-coupled | Single-extraction condensing direct-coupled | Double-extraction condensing direct-coupled | Back-pressure geared |
|---|---|---|---|---|---|
| Blading: R = reaction} | I 1/2 | I 7/1↑ | R↑R | I 1/2↑I 2/1↑ | I (6 stages) |
| I = impulse} | R20↑R21 | I 4/1 | | I 1/2 I 1/1 | |
| Turbine speed .....rev./min. | 3,000 | 3,000 | 3,000 | 3,000 | 6,000 |
| Max. cont. rating.....kw. | 3,500 | 3,500 | 2,300 | 3,500 | 1,875 |
| Max. load with no extrac..kw. | 2,500 | 2,500 | 1,700 | 2,500 | 0 |
| Initial steam press..lb./sq. in. | 405 | 400 | 340 | 405 | 350 |
| Initial steam temp.....° F. | 720 | 700 | 700 | 700 | 600 |
| Max. steam input.....lb./hr. | 87,000 | 85,000 | 47,000 | 107,000 | .... |
| First extraction | | | | | |
| Pressure .....lb./sq. in. | 45 (±9) | 45 (±9) | 105 | 135 (±5) | 30 |
| Max. flow .....lb./hr. | 80,000 | 80,000 | 25,000 | 40,000 | .... |
| Second extraction | | | | | |
| Pressure .....lb./sq. in. | .... | .... | .... | 45 (±9) | .... |
| Max. flow .....lb./hr. | .... | .... | .... | 60,000 | .... |
| Condenser | | | | | |
| Cooling surface .....sq. ft. | 2,000 | 2,000 | 3,090 | 2,400 | .... |
| Cooling water temp....° F. | 70 | 70 60 | 70 | 70 | .... |
| Vacuum .....in. Hg. | 28.43 | 28.5 | 28.1 | 28.5 | .... |
| Max. steam flow.....lb./hr. | 28,250 | 29,000 | 22,000 | 30,000 | .... |
| Alternator | | | | | |
| Max. cont. rating.....kw. | 3,500 | 3,500 | 2,300 | 3,500 | 1,875 |
| Speed .....rev./min. | 3,000 | 3,000 | 3,000 | 3,000 | 1,000 |
| Voltage ..... | 3,300 | 3,300 | 415 | 3,300 | 3,300 |
| Phases ..... | 3 | 3 | 3 | 3 | 3 |
| Frequency .....cyc./sec. | 50 | 50 | 50 | 50 | 50 |
| Power factor ..... | 0.8 | 0.8 | 0.8 | 0.8 | .... |
| Ventilation ..... | Closed air circuit | Closed air circuit | Closed air circuit | Closed air circuit | Open |

↑ = Extraction point.

In a pulp and paper mill there will be from time to time considerable variation in the amounts of power and process steam required, and it is necessary to have sufficient condenser capacity to accommodate this or to draw on some external supply of power. Performance charts such as are shown in *Figures 3 and 4* are useful in determining the required capacity of the condensing section. The output, in kilowatts, of the proposed turbo-alternator installation is plotted against the steam flow to the turbines. For any given number of kilowatts of power generation there will be a range of steam consumptions depending on the proportion of power generated by extraction steam and that generated by steam to condenser. The range of steam consumptions will be limited by the maximum and minimum extractions possible. Similarly for a given steam flow to the turbine there will be a range of power outputs depending on whether a small amount or a large amount of the steam passes to the condenser.

Thus on *Figure 3* the point 'X' represents the following conditions:

| | |
|---|---|
| Power generation ..... | 8,000 kw. |
| Steam to turbine ..... | 140,000 lb./hr. |
| Steam extracted ..... | 80,000 lb./hr. |
| Steam to condensers ..... | 60,000 lb./hr. |

If the load increases to, say, 9,000 kw. while the extraction remains constant we have point '$X_1$' which represents

| | |
|---|---|
| Power generation ..... | 9,000 kw. |
| Steam to turbine ..... | 150,000 lb./hr. |
| Steam extracted ..... | 80,000 lb./hr. |
| Steam to condenser ..... | 70,000 lb./hr. |

If the load remains constant while the extraction increases from 80,000 to 100,000 lb./hr. we have point '$X_2$'

| | |
|---|---|
| Power generation ..... | 8,000 kw. |
| Steam to turbine ..... | 152,000 lb./hr. |
| Steam extracted ..... | 100,000 lb./hr. |
| Steam to condenser ..... | 52,000 lb./hr. |

Conditions which fall outside the chart cannot be accommodated by the turbo-alternators. For instance, if a load of 5,000 kw. is required the maximum steam which can be extracted

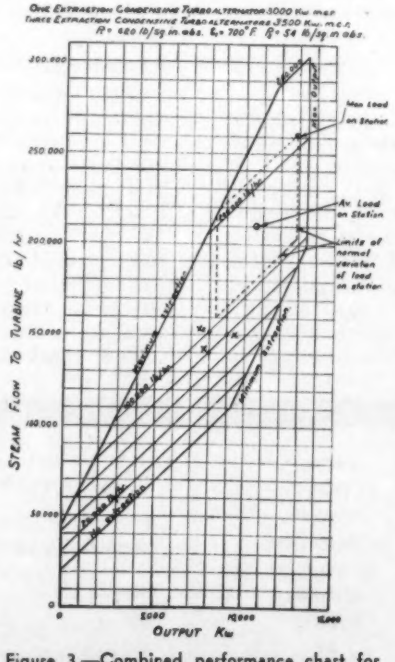


Figure 3.—Combined performance chart for four extraction turbo-alernators

from the turbine is 140,000 lb./hr. If 200,000 lb./hr. of process steam is required some 60,000 lb./hr. must be supplied through a reducing valve from the high-pressure main. This means that conditions represented by the points to the left of the maximum extraction line represent some steam passed through a reducing valve. A load of 12,000 kw. can only be obtained with an extraction of about 75,000 lb./hr. of steam and if this cannot be gainfully used by the process the excess must be blown to atmosphere because the condensers are at their maximum capacity.

The average and maximum loads which the station is expected to carry may be estimated and they are shown in *Figure 3*. If a parallelogram is drawn with these points as a semi-diagonal it may be considered to rep-

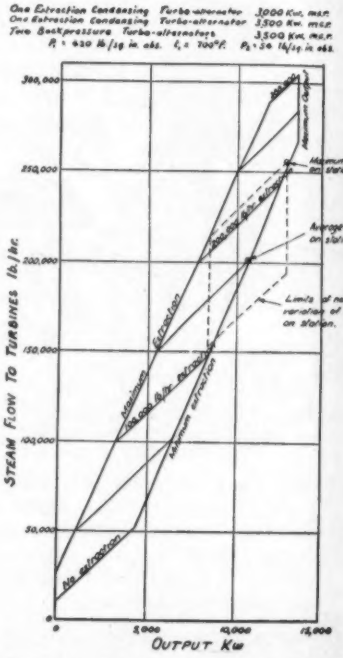


Figure 4.—Combined performance chart for two extraction and two back-pressure turbo-alternators

resent the limits of normal variation of load on the station, and it will be seen that in *Figure 3* all these normal variations can be accommodated.

In *Figure 4*, which is based on two extraction-condensing and two back-pressure turbines, it will be seen that the average and maximum loads can be accommodated but much of the parallelogram falls outside the chart. This means that with average process steam requirements only average power load can be accommodated unless steam is blown to atmosphere. The conclusion to be drawn is that the turbines in the second case have insufficient condenser capacity.

## Cooling Water

Condensers require considerable quantities of cooling water and when this water is of high quality it is of-

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**1**

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...and wait for delivery
...wait—and watch production stay at zero

**2**

**Send someone to get the required belt**

...and pay your employee while he goes for the belt
...pay through loss of production

**3**

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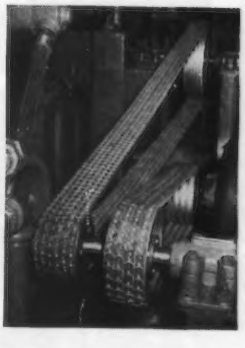

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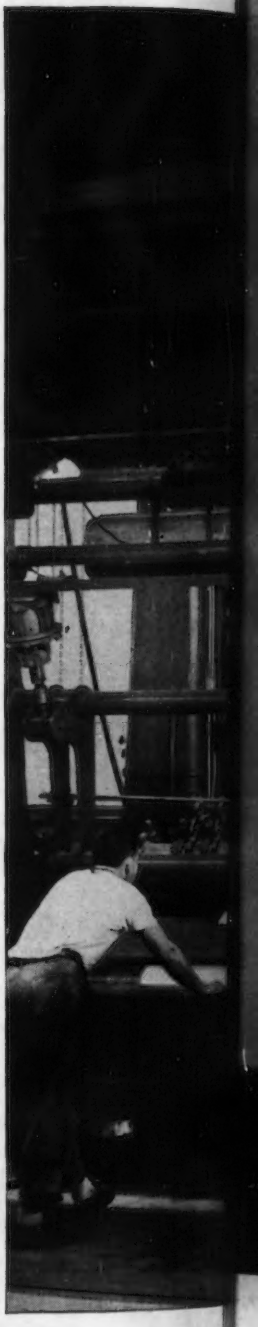
# How to get more production and lower cost

# on your supercalenders



This new supercalender in a big New England mill produces at 1500 fpm —more than twice as fast as their older machines. But that's not all. It requires one less man to run it, broke is substantially reduced, and maintenance and operating costs are down. Much of this is due to their Westinghouse drive with electrified unwind and windup stands.

### *Drive makes high speeds practical*

The Westinghouse drive holds paper tension constant from unwind to windup, and through all speed changes from starting to full speed. This prevents calender cuts and sheet wrinkles even at high speeds. Moreover, the tension at the windup is *gradually decreased* automatically as the roll builds up. This "tapered tension" results in highly uniform, soft rolls.

### *Controls make operation simple*

Because operation of this drive is so simple, only two men are needed on the machine instead of the three normally required. The operator runs the whole machine from his centralized control panel (behind the ladder at right). He has a complete set of instruments to show paper tension, motor speed and load.

### *Drive reduces maintenance, saves power*

Another important feature of the drive is the elimination of mechanical braking. Electrical "regenerative" braking not only does away with this heavy maintenance item but actually *feeds power back into the system* when the brakes are applied. The drive also has no friction clutches or mechanical transmissions so it stops all that maintenance.

### *Call Westinghouse early on your next project*

If you're planning to buy a new supercalender or modernize your present machines, find out more about this drive. And remember this is just one example of the many outstanding Westinghouse developments for your paper mill. Before you build, expand or modernize, be sure to check your nearby Westinghouse office for ideas.

### *Learn more about Westinghouse drives*

This free booklet tells how you can improve your finishing operations, how you can boost production and cut costs. Write for B-4038, "Westinghouse Drives for Paper Finishing and Converting Machinery". Westinghouse Electric Corporation, Box 868, Pittsburgh 30, Pa. J-94912

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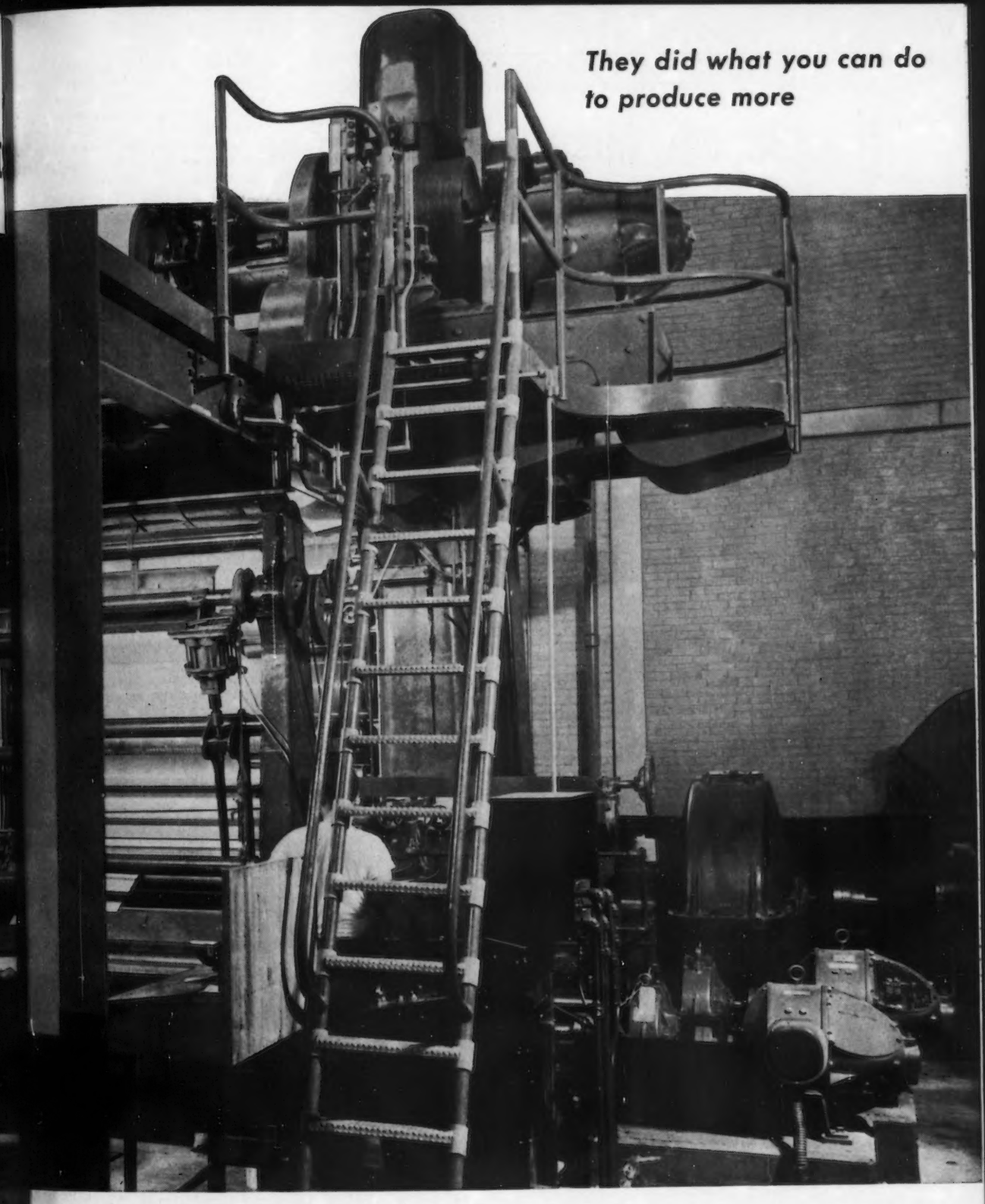

The new Appleton supercalender with Westinghouse drive. At top is the unwind drive. Main stack drive is against the wall and drives for the two-drum windup are in front of it. All three drives are co-ordinated electrically so that paper tension is held constant all the way through.

TABLE IV

INCREASED COST DUE TO HIGHER COOLING WATER TEMPERATURES

| Cooling water inlet temp., ° F. | Vacuum at 14,000 lb./hr., in. Hg. | Total heat H at vacuum of col. 2, B.t.u./lb. | Adiabatic heat drop from H = 1,365, B.t.u./lb. | Decreased heat drop due to water above 70° F., B.t.u./lb. | Power loss for turbo-alternator 65% effic., kw./1,000 lb. | Power loss for 57,000 lb./hr. steam 7,000 hr., kw.hr./yr. | Extra yearly cost: Purchased power at 0.8d./kw.hr., £ | Extra yearly cost: Coal at £3/10/- /ton, £ |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 70 | 28.73 | 892 | 448 | .. | ... | ..... | ..... | .... |
| 80 | 28.32 | 905 | 435 | 13 | 2.48 | 994,000 | 3,320 | 2,200 |
| 90 | 27.73 | 921 | 419 | 29 | 5.52 | 2,210,000 | 7,330 | 5,500 |
| 100 | 26.95 | 936 | 404 | 44 | 8.38 | 3,340,000 | 11,100 | 8,200 |

ten convenient to use fresh water in the condensers before passing a portion to the pulp and paper mills. Under normal conditions this double usage has certain advantages, i.e., the saving of heat and the saving in pumping costs if the river or other source of supply is remote from the mill.

Australia as a whole has very poor water resources and there are few sites where timber, water and coal (these being the three major raw materials) are conveniently available. One such is in Victoria on the Latrobe River, where the only pulp mill on the mainland is situated. This mill is situated a few miles downstream from the major base load station of the State Electricity Commission of Victoria and the river water before reaching the mill is used in this power station for condenser cooling. The result is that the water reaching the mill is much above normal river temperature and under low flow summer conditions temperatures of over 90°F. have already been recorded at the mill. The State Electricity Commission of Victoria is expanding its power station and has estimated that under certain conditions the water temperature at the mill could average 90°F. for some months of the year and, under abnormally low flow conditions, temperatures of 100°F. could be reached.

It is interesting to consider the effect of this high temperature cooling water on condenser capacity and to estimate the increased coal consumption cost.

*Figure 5* shows the mill turbine condenser vacuum plotted against steam condensed for various inlet water temperatures. These particular condensers were designed for a full load capacity of 29,000 lb./hr. steam (2,500 kw. load) with cooling water at 70°F. Under average conditions the condensers are expected to operate at about 14,000 lb./hr. so that the following vacua may be expected.

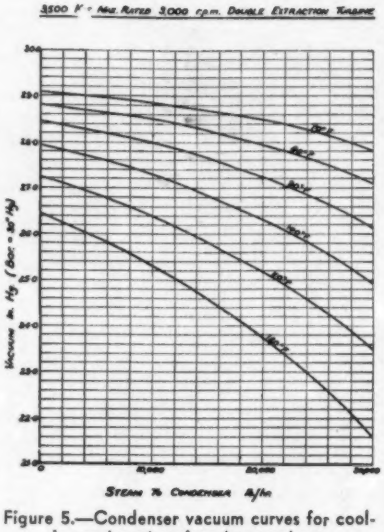


Figure 5.—Condenser vacuum curves for cooling water at various temperatures

| Water inlet temperature, ° F. | Vacuum at 14,000 lb./hr., in. Hg. |
|---|---|
| 70 ..... | 28.73 |
| 80 ..... | 28.32 |
| 90 ..... | 27.73 |
| 100 ..... | 26.95 |

If the initial steam conditions are taken as 420 lb./sq. in. (abs.) and 700°F (total heat H = 1,365 B.t.u./lb.) the entropy is found to be 1.638. From the Mollier diagram the total heat at this entropy and for the various vacua can be determined, thus giving the adiabatic heat drop and the decreased heat drop due to the lower vacuum. These figures are shown in the first five columns of *Table IV*.

In column 6 the effect of the decreased heat drop is shown as a power loss per 1,000 lb. of steam assuming a turbo-alternator overall efficiency ratio of 65 percent while columns 7, 8 and 9 show the loss for the station represented in *Figure 2*, where 57,000 lb./hr. steam is shown passing to the condensers.

In columns 8 and 9 is shown the extra yearly cost due to cooling water temperature being above 70°F. Two bases are shown: in the first the extra power required is considered as purchased from the public supply at 0.8 pence/kw.hr., and in the second the extra steam required to generate this power is treated on a marginal basis, coal being taken at £3.10.0 per ton and yielding 8 lb. steam./lb. of coal. The annual loss given in *Table IV* and incurred as the result of these higher water temperatures does not make any allowance for the increased capital outlay necessary to provide the same margin of reserve power-generating capacity as exists under present conditions. The economic importance of reasonably cool cooling water is clear.

Considering now the reduction in condenser capacity due to the hotter cooling water, *Table V* is easily calculated from the data given in *Figure 5* and the Mollier diagram for steam. The reduction in condenser capacity is a little over 3 percent for each 10°F. rise in cooling water temperature.

## Increase of Extraction Pressure

In considering a drying cylinder of a paper machine merely as a heat exchanger it is clear that an increase in steam temperature (or pressure) will increase the rate of evaporation of the water from the sheet and either allow a thicker sheet to be produced or the machine to be run at a higher speed, thus increasing production.

When it is considered that a modern paper machine and its auxiliaries cost more than £1,000,000 it is obviously necessary to get the highest production possible to keep cost per ton of product as low as possible. The tendency of the papermaker is therefore to raise the steam pressure at the driers and it is interesting to consider the effect of this on power generation.

Suppose the extraction pressure is raised from 40 lb./sq. in. (gauge) to 45 lb./sq. in. (gauge) and that the initial steam conditions were 420 lb./sq. in. (abs.) and 700°F. as before. Then the adiabatic drop in the two cases is 197.5 B.t.u./lb. and 190.5 B.t.u./lb. from the Mollier diagram for steam. If it is assumed the turbine efficiency ratio in each case is 65 percent, then

TABLE V

REDUCTION IN CONDENSER CAPACITY DUE TO HIGHER COOLING WATER TEMPERATURES

| Cooling water inlet temp., ° F. | Vacuum at 29,000 lb./hr., in. Hg. | Total heat H at vac. of col. 2, B.t.u./lb. | Adiabatic heat drop from H = 1,365, B.t.u./lb. | Decreased heat drop due to water above 70° F., B.t.u./lb. | Power loss for turbo-alternator 65% effic., kw./1,000 lb. | Power loss for 29,000 lb./hr., kw. | Per cent reduction in condenser capacity (2,500 kw.), % |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 70 | 27.9 | 917 | 448 | .. | ... | ... | .. |
| 80 | 27.2 | 931 | 434 | 14 | 2.66 | 77 | 3.1 |
| 90 | 26.3 | 946 | 419 | 29 | 5.52 | 161 | 6.4 |
| 100 | 25.1 | 962 | 403 | 45 | 8.55 | 248 | 9.9 |

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$$\text{Power loss per lb. steam} = \frac{(197.5 - 190.5) \times 0.65}{3415} \text{ kw.}$$

If a paper or board mill uses 40,000 lb. steam/hr. and operates 7,000 hr./year

$$\text{The loss per year} = \frac{7 \times 0.65}{3,415} \times 40{,}000 \times 7{,}000 = 374{,}000 \text{ kw.hr.}$$

$$\text{Value at 0.8 pence per kw.hr.} = 374{,}000 \times \frac{0.8}{240} = £1{,}240/\text{year.}$$

The effect of raising the steam pressure to the driers of one machine by only 5 lb./sq. in. (gauge) means that about £1,200/year must be spent on purchasing power. The alternative is to increase the number of driers and the following may be considered as a first approximation.

Assume:

(a) the pressure at the driers is 5 lb./sq. in. (gauge) less than the extraction pressure;
(b) the steam temperature at the driers is that of saturated steam;
(c) the average sheet temperature is 200° F.;
(d) the drying rate is directly proportional to the difference between the steam temperature and the sheet temperature; and
(e) the machine has 50 driers.

Saturated temperature 35 lb./sq. in. (gauge) = 281° F.
Saturated temperature 40 lb./sq. in. (gauge) = 287° F.
Temperature difference 35 lb./sq. in. (gauge) = 281 — 200 = 81° F.
Temperature difference 40 lb./sq. in. (gauge) = 287 — 200 = 87° F.

$$\text{Increased evaporation} \frac{87 - 81}{81} \times 100 = 7.4\%$$

Number of extra drying cylinders for equivalent capacity

$$\frac{7.4}{100} \times 50 = 3.7$$

Thus on the above assumptions, if four extra drying cylinders can be installed and operated for less than the capital cost equivalent to £1,240 p.a. (i.e., £12,400 at 10 percent), it will be cheaper to install the extra drying surface.

It is realized that many of the assumptions made in the above calculations are open to question but nevertheless an appreciation of the power lost compared with the production increase should always be made before the dryer pressure is raised.


### Acknowledgments

The guidance and assistance of W. P. F. Drews, the criticisms of V. E. Radford, and the help given by others is gratefully acknowledged.


### Reference to Literature


(1) Drews, W. P. F.—Low grade fuel in the Australian pulp and paper industry. *Aust. Pulp & Paper Ind. Tech. Assoc. Proc.* 4: 295 1950).

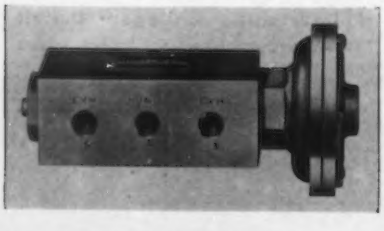

# What's New in Equipment

## Supplies and Materials

### Diaphragm Valve

Introduced by C. B. Hunt & Son, Inc., Salem, Ohio, the Quick-As-Wink diaphragm-operated spring-return single plunger valve is for use when only low pressure air is available for the pilot control. These valves can be operated with instrument air at pressures of from 12 to 35 p.s.i. on the diaphragm, consequently are suited for use in laboratories and on all types of industrial applications where only low pressure air for the pilot control is available.

Low in price, they feature sturdy construction; simplicity in design; ease of operation. All parts are carefully balanced. Valve housing is aluminum.



Stainless steel plunger is hollow with precision placed radial ports. The spring return is placed under the diaphragm push plate permitting open end exhaust if desired. The manufacturer reports that the improved design prolongs the life of the packing and valve parts, and that the valves can be completely disassembled and reassembled in a few minutes without disturbing the main piping.

Furnished tapped for either ⅛" or ¼" pipe connection, in 2-way; 3-way; double 2-way; 4-way; and 5-way designs for use with air, oil or water at line pressures up to 125 p.s.i., also vacuum at normal temperatures, (not exceeding 150° F.).

### Heavy Duty Tachometer Head

Rugged, heavy duty tachometer heads, for measuring a wide range of speeds, are now available from Metron Instrument Co., 432 Lincoln St., Denver 9, Colo. Speeds between 200 and 10,000 r.p.m. for full scale indication are measured by these heads, and they can be overspeeded 2 to 10 times with no damage resulting, the manufacturer states.

Stable performance is assured over a wide range of temperature, humidity, vibration, or magnetic fields. Permanent lubrication for an extreme temperature range is employed throughout. All heads of the same type number are completely interchangeable and require no special matchings or adjustments.

### Hydraulic Core Jack

Introduced by John Dusenbery Co. Inc., 271 Grove Ave., Verona, N. J. is a Hydraulic Core Jack for pressing chucks into mill rolls.

Designed as a modern answer to an old problem of driving cone type chucks into mill roll cores on unwind shafts, the standard jack is available to fit shafts up to 2⅜" diameter. Sleeves to adapt one jack assembly for several shaft diameter also can be had.

According to the manufacturer, the two-ton force of the ram can drive a cone into the core of a mill roll far more effectively than the impact of a heavy sledge hammer or most types of screw jack arrangements, with less operator fatigue and no danger of injury to equipment. Field tests show complete elimination of loosening and damage to the mill roll core while unwinding, it is stated.

### Potential Transformers

An improved line of indoor and outdoor potential transformers in the 2400-volt class, types PT and PTO, is available from the Westinghouse Electric Corp., Box 2099, Pittsburgh 30, Pa. A new crepe paper insulation that is vacuum dried and impregnated has a high impulse and dielectric strength,

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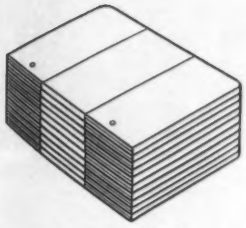

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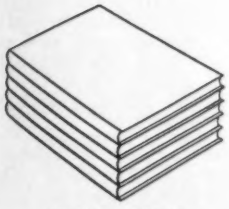

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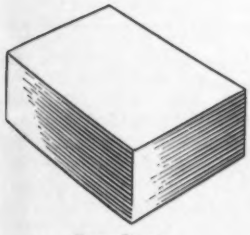

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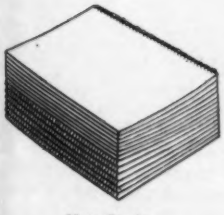

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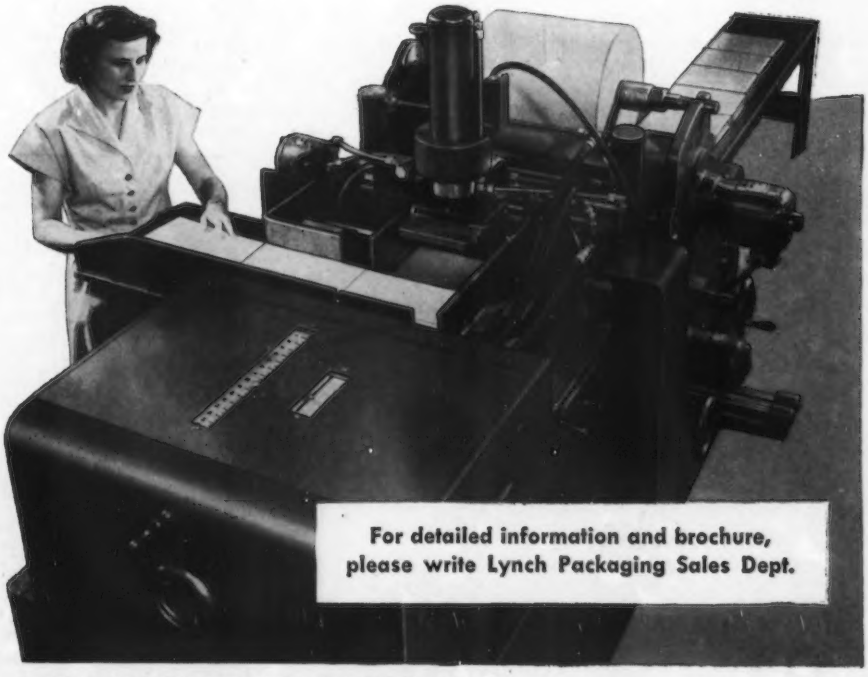

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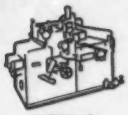

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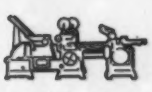

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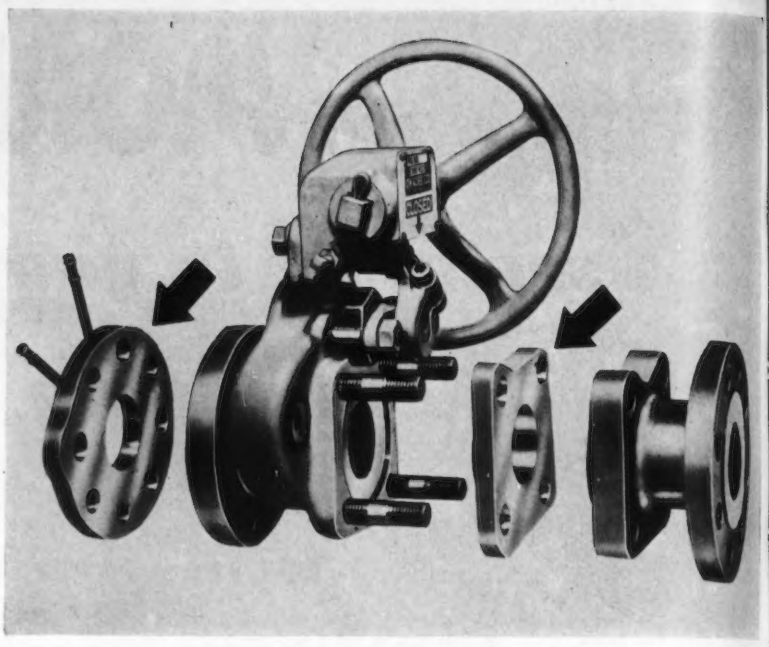
and a low insulation power factor. Available in either 45- or 60-kv full-wave impulse test level, the new transformers meet the 0.3W, 0.3X, 0.3Y, and 1.2Z metering accuracy classifications it is said. Type C Hipersil cores are used.

Type PTO (outdoor) is available with cover-mounted bushings only, without fuses. Both type PT and PTO can be mounted in any position.

### Roll Grinding Wheel

A new type roll grinding wheel has been developed for the paper industry. Known as the E-4 Shellac Wheel, and produced by Norton Co., 1 New Bond St., Worcester 6, Mass., the wheel grinds all paper mill rolls whether made of cast iron, steel, granite, stonite, rubber, or brass, it is stated.

It is available in a variety of specifications to meet exacting requirements, and features: (1) longer wheel life, holding its cut across the roll; (2) faster rate of cut; (3) improved finish with freedom from scratches, chatter, and feed lines; (4) reduced grinding costs; (5) operator acceptance; (6) consistent performance.

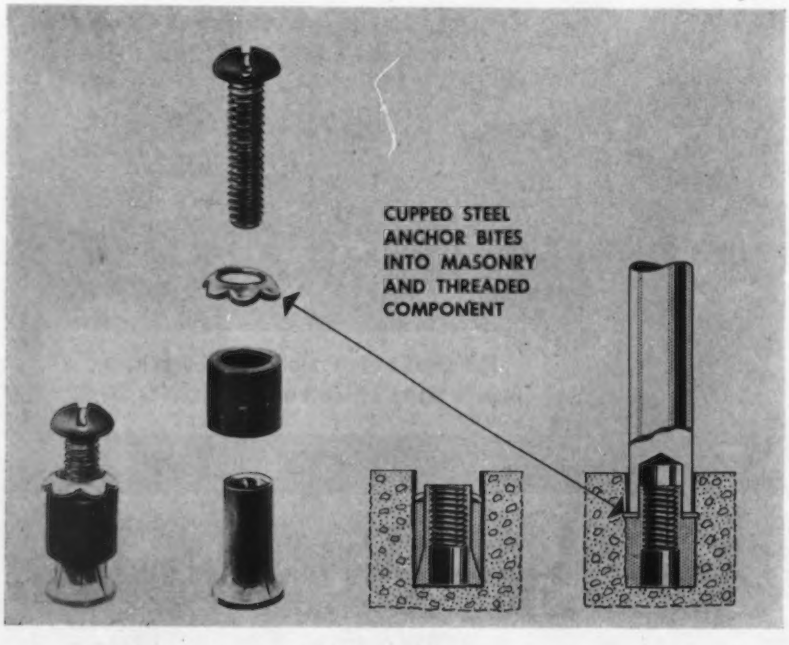


### Electrically Heated Valves

A line of electrically heated valves is announced by Okadee Co., 332 South Michigan Ave., Chicago 4, Ill. Designed to keep valve mechanisms clear of frost and ice in liquid carbon dioxide lines at temperatures as low as 110° F. Other applications being developed include both hot, cold and viscous liquid and gas lines, as well as uses where heated valves have heretofore been economically impractical.

Single-disc valves require the heating element at right in the illustration. Double-disc valves can be equipped with both elements illustrated. Heat from the elements is transmitted directly to the valve seats and, as a result, heat the entire flow opening through the valve, in addition to the operating mechanism.

All heated valve sizes from 2" to 6" are available, with pneumatic, hydraulic, solenoid or manual control. Heating elements can be provided for either 110- or 220-volt operation, with inputs ranging from 400 to 3,000 watts per unit. Heated valves for use in hazardous atmospheres will be offered soon.




### Screw Anchorage

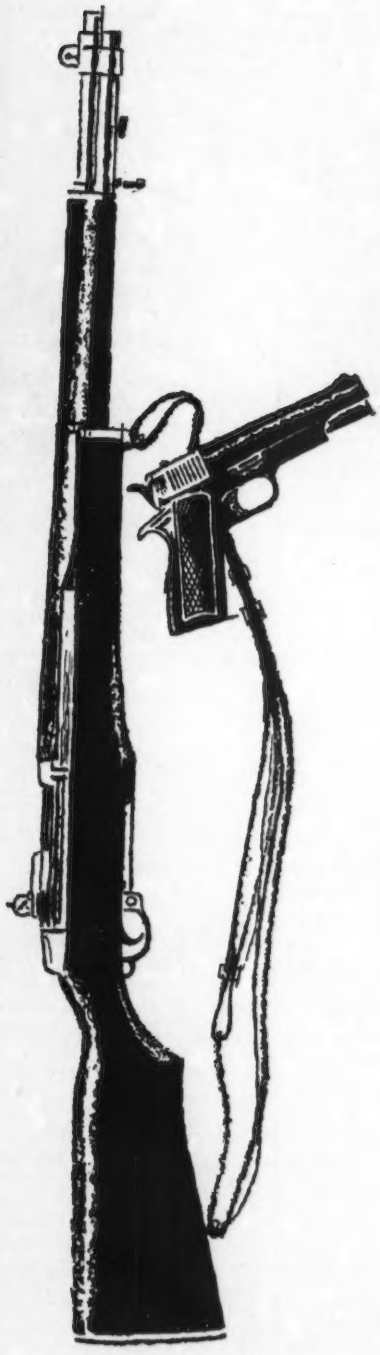
Utilizing the rigidity of steel to supplement lead as an anchoring medium, Super-Grip Anchor Bolt Co., Inc., 3333 N. 22nd St., Philadelphia 40, Pa. has developed a new screw anchor that is easily installed and is said to provide increased anchorage strength and resistance to vibration.

The patented Super-Grip Screw Anchor can be used wherever machine screws, stove bolts or wood screws must find an anchor in brick or masonry. It provides solid anchorage, prevents loosening and pulling out even under the toughest conditions of vibration or strain, it is claimed.

The principal features are a threaded insert, lead sleeve and a cup-shaped fluted steel anchor. When driven into place, the lead mushrooms out and then the steel anchor collapses, forcing sharp edges into the masonry and the threaded component.

A tamping tool, provided with every 100 anchors, is used to mushroom the lead sleeve and flatten the steel anchor. Also provided is a blow tube to be inserted into the masonry holt to remove all dust and dirt, and thus assure solid anchorage against masonry.

*(Continued on page 42)*



# OR BUTTER

As the nation develops two programs
at the same time, emphasis necessarily swings
between emergency defense and civil growth.

But whether the demand is for more aluminum
for planes or more paper for books—
to the chemical industry, it means demand
for soda ash.

Chlorine for munitions or chlorine for bleaching—
the demand is still for chlorine.

This is the nature of the chemical industry:
it is basic to all industries and grows with each.

* * *

For the paper industry, Diamond produces
chlorine, silicate of soda, soda ash,
caustic soda, calcium carbonate and salt cake.

## DIAMOND ALKALI COMPANY

CLEVELAND · OHIO

*Chemicals you live by*

DIAMOND ALKALI CHEMICALS

# PRICES

**The prices below reflect market quotations in New York at the mill level on standard grades. Does not include spot offerings.**

## PAPER AND BOARD

**Standard News, Delivered Ports**

| | |
|---|---|
| Rolls, contract, per ton | $116.00/ — |
| Sheets | 131.00/ — |

**Kraft**— per cwt. 50# base wgt. OPS Ceiling CPR 88

F.o.b. Southern & Western integrated mills. C.l. Freight allowed up to $10 a ton.

| | |
|---|---|
| Standard Wrapping, ctr. rolls | $7.75/ — |
| Butchers, counter rolls | 8.25/ — |
| Standard Bag, mill rolls | 7.50/ — |
| Shipping Sack, mill rolls | 7.75/ — |
| Gumming, mill rolls | 8.00/ — |
| Asphalting, mill rolls | 7.75/ — |
| Envelope, Sub. 20, mill rolls | 9.25/ — |

**Tissues— per ream 24x36 (480) 10 lbs. 2500 lbs or more**

| | |
|---|---|
| Wh. No. 1 Frd. | $1.90/$2.05 |
| Wh. No. 1 MG | 1.90/ 2.05 |
| Wh. No. 1½ | 1.80/ 1.90 |
| Wh. No. 2 | 1.60/ 1.65 |
| Kraft Anti-Tar 20-30 | 1.90/ — |
| White Anti-Tar 20-30 | 2.20/ — |

**Toilet**— per case of 100 rolls—1M sheets

| | |
|---|---|
| Unbleached 4½x4½ | $8.00/$8.25 |
| Unbleached 4½x5, 650 sheets | 6.65/ — |
| Bleached 4½x4½ | 10.00/12.50 |
| Bleached 4½x5 | 9.81/10.14 |
| Per Case of 50 rolls—2000 sheets | |
| Unbleached 4½x4½ | $8.00/$9.75 |
| Bleached 4½x4½ | 6.95/ — |
| Per Case of 100 rolls—1000 sheets | |
| Facial, 4½x4½, 2-ply | $8.95/10.37 |
| 4½x5, 2-ply | 10.25/10.75 |

**Paper Towels— per case of 3750**

| | |
|---|---|
| Wh. Jr. M'tif'd 9½x9½ | $6.40 |
| Br. Sr. M'tif'd 9⅞x12 | 4.40 |
| Br. Jr M'tif'd 9½x9⅞ | 3.90 |
| Br Jr Sgl. fold 9⅞x10¾ | 3.95 |
| C-Fold 10¼ min. x 14 max. | 5.90/ 6.64 |
| Blchd. 7½x11, 48/50 rolls | 6.80/ 7.92 |

**Manila, per cwt.**

| | |
|---|---|
| No. 1 Jute Tag, 100-lb., sheets | $20.55/22.55 |
| Reg. Jute M.F. 40-lb., sheets | 19.50/21.50 |
| Printing Manila | 12.00/ — |

**Gummed Tape**— per bdl., 500 bdls. or more

| | |
|---|---|
| 70-lb. 375 ft. GSI | $7.20 / — |
| 60-lb. 600 ft. GSI | 7.20 / — |
| 35 lb. 800 ft. GSI | 8.28 / — |
| 35-lb. 500 ft. GSO | 6.21 / — |

## MARKET WOOD PULP

**Second Quarter Contract Prices. Per Short Air-Dry Ton**

| | Varying freight allowances | | On Dock Atlantic Ports | | |
|---|---|---|---|---|---|
| | *U.S. | Canadian | Swedish | Finnish | Norwegian |
| Groundwood | $92.50/ — | ‡$78.00/ 95.00 | | | |
| Sulfate, Bleached | 145.00/ — | 190.00/ — | $180.00/185.00 | | $180.00/ — |
| Semi-bleached Sulfate | 140.00/ — | | | | |
| Sulfate, Unbl. | 120.00/132.50* | 135.00/170.00 | 145.00/ — | 145.00/ — | |
| Sulfite, Blchd. | 140.00/ — | 140.00/160.00 | 175.00/180.00 | 175.00/ — | 175.00/ — |
| Sulfite, Unblchd. | 132.50/ — | 150.00/162.50 | 155.00/160.00 | 155.00/ — | |
| Sulfite, Unbl'd (Glassine) | | 164.00/ — | 160.00/ — | | |
| Soda, Blchd. | 140.00/ — | 155.00/ — | | | |
| Sulfite Screenings | 72.50/ — | | | | |
| Sulfate Screenings | 67.50/ — | | | | |
| Groundwod Screenings | 60.00/ — | | | | |
| Unblchd Sulfate Sideruns | 132.50/ — | | | | |
| Stand. News. Sideruns | 92.50/ — | 87.50/ — | | | |

* OPS Ceiling, CPR 49 ‡ F.o.b. Shipping Point.

**Boards** Deld., per ton (10 tons or over) CPR 108

| | |
|---|---|
| Filled News | $95.00/110.00* |
| Plain Chip | 95.00/105.00* |
| Blchd. Mla. L-d. Chip | 150.00/ — |
| White Pat. coated .020 | 175.00/ — |
| Kr. Liner 42 lb. M sq. ft. $2.47 | 117.50/ — |
| Kr. Corr. .009 M sq. ft. $1.59 | 122.50/ — |
| Binders Boards | 137.50/140.00 |

The following prices are representative distributors' resale prices:

**Rag Content Bonds and Ledgers—**
White, 20 lb.

| Bonds | 4 Ctns. |
|---|---|
| | per cwt. |
| 100% Rag Ex. No. 1 | $70.45/$75.90 |
| 100% Rag | 62.65/ — |
| 75% Rag | 48.15/ — |
| 50% Rag | 38.90/ — |
| 25% Rag | 31.65/ 33.00 |

| Ledgers | 4 Ctns. |
|---|---|
| | per cwt. |
| 100% Rag Ex. No. 1 | $72.65/$72.80 |
| 100% Rag | 63.90/ — |
| 75% Rag | 49.40/ — |
| 50% Rag | 40.20/ — |
| 25% Rag | 33.00/ 34.30 |

**Sulphite Bonds and Ledgers**
White, 20 lb.

| Bonds | 4 Ctns. |
|---|---|
| | per cwt. |
| Watermarked | $19.00/$20.50 |
| Plain | 18.40/ 19.50 |

| Ledgers | 4 Ctns. |
|---|---|
| | per cwt. |
| Watermarked | $20.30/$21.80 |
| Plain | 19.35/ 20.80 |

**White Book**

| Conversion Coated | Case |
|---|---|
| | per cwt. |
| No. 1 | $23.90/$24.65 |
| No. 2 | 22.40/ 22.85 |
| Machine Coated | |
| No. 1 | $19.15/$19.65 |
| No. 2 | 16.65/ 17.40 |
| Uncoated | |
| No. 1 Antique (Watermarked) | $19.15/$19.65 |
| Offset | 18.15/ 19.15 |
| A Grade E. F. | 18.40/ 18.65 |
| A Grade S. C. | 18.90/ 19.15 |
| B Grade E. F. | 17.40/ 18.15 |
| B Grade S. C. | 17.90/ 18.65 |

‡ Indicates a price change.

## WASTE PAPER MARKET

**Prices to mills, per ton, f.o.b. cars shipping point (includes brokers' fee.) These quotations are a partial indication of the price range in each market on the date specified, as gathered from major dealers. ALL PRICES ARE STRICTLY NOMINAL.**

| | New York May 5 | Philadelphia May 5 | Boston May 9 | Chicago May 5 |
|---|---|---|---|---|
| No. 1 Mixed Paper | nominal | $5.00/ 7.00 | $7.00/ — | $8.00/ — |
| No. 1 News | $8.00/ 10.00 | 8.00/ 10.00 | 9.00/ 12.00 | 12.00/ — |
| Over-issue News | 18.00/ 22.00 | 13.00/ 15.00 | 15.00/ 18.00 | 15.00/ — |
| Mill Wrappers | 8.00/ 12.00 | 7.00/ 9.00 | 13.00/ 19.00 | 11.00/ — |
| Corrugated Containers | 10.00/ 11.00 | 10.00/ 12.00 | 12.50/ 13.00 | 14.00/ — |
| Double Kraft Ld. Corr. Cuts | 30.00/ 42.50 | 40.00/ 42.50 | 35.00/ 42.50 | 35.00/ 42.50 |
| 100% Kraft Corr. Cuts | 45.00/ 50.00 | 60.00/ 65.00 | 60.00/ 70.00 | 55.00/ — |
| Used Sugar & Flour Bags | 35.00/ 45.00 | 35.00/ — | 40.00/ 45.00 | 30.00/ — |
| Super Resorted Br. Kraft | 35.00/ 45.00 | 40.00/ 45.00 | 35.00/ 40.00 | 30.00/ — |
| New Br. Kraft Env. Cuts | 60.00/ 75.00 | 80.00/ 85.00 | 75.00/ 85.00 | 70.00/ — |
| New Br. Kraft Cuts | 55.00/ 70.00 | 70.00/ 80.00 | 45.00/ 70.00 | 60.00/ — |
| No. 1 Gdwd. Shvs. | 20.00/ 30.00 | 25.00/ 30.00 | 28.00/ 35.00 | 22.00/ — |
| White Newsblanks | 50.00/ 70.00 | 60.00/ 70.00 | 55.00/ 75.00 | 45.00/ — |
| No. 1 Flyleaf Shvs. | 45.00/ 50.00 | 35.00/ 45.00 | 40.00/ 65.00 | 30.00/ — |
| No. 1 Soft Wht. Shvs. | 75.00/ 90.00 | 90.00/100.00 | 90.00/100.00 | 75.00/ — |
| Super Soft Wht. Shvs. | 95.00/105.00 | 100.00/110.00 | 100.00/115.00 | 85.00/ — |
| Hd. Wht. Shvs. | 97.00/115.00 | 115.00/120.00 | 100.00/115.00 | 90.00/ — |
| Hd. Wht. Env. Cuts | 120.00/135.00 | 130.00/140.00 | 120.00/140.00 | 100.00/ — |
| New Manila Env. Cuts | 60.00/ 70.00 | 85.00/ 95.00 | 85.00/ 95.00 | 40.00/ — |
| Col. Tab. Cards | 35.00/ 40.00 | 45.00/ — | 60.00/ 80.00 | 35.00/ — |
| Manila Tab. Cards | 65.00/ 70.00 | 70.00/ 85.00 | 85.00/100.00 | 60.00/ — |
| No. 1 Mixed Ledger | 40.00/ — | 35.00/ 45.00 | 35.00/ 45.00 | 35.00/ — |
| White Ledger | 50.00/ 55.00 | 55.00/ 60.00 | 55.00/ 65.00 | 50.00/ — |
| No. 1 Book & Mag.† | 23.00/ 25.00 | 23.00/ 30.00 | 20.00/ 25.00 | 15.00/ — |
| No. 1 Rep'd. Hvy. Books‡ | 35.00/ 40.00 | 35.00/ 45.00 | 30.00/ 44.00 | 27.50/ — |

† Includes Time & Life; no coarse groundwood. ‡ Not to exceed 10% groundwood. § Deld.

## RAG MARKET

**New Domestic Cotton Cuttings**

OPS Ceiling Price, CPR 28 *
Delivered Mill Basis

| | |
|---|---|
| No. 1 White Shirts | $18.50/$21.00* |
| No. 1 Unblchd. Muslins | 18.75/ 21.00* |
| Blchd. & Unblchd. Underwears | — / 21.00* |
| Blchd. Canton Flannels | — / 21.00* |
| No. 1 Light Silesias | 15.00/ 16.00* |
| No. 1 Light Prints | 10.00/ 11.50* |
| No. 1 Blue Overalls | 13.50/ 14.50* |
| Suntan Khakis | — / 11.50* |
| Fancy Shirts | — /$10.00* |
| Indigo Blues | 8.25/ 10.00* |
| Mixed Khakis | 7.00/ 8.00* |
| Corduroys | — / 8.00* |
| Cottonades | 7.50/ 8.00* |
| No. 1 Washables | — / 6.50* |

**Old Domestic Cotton Rags**
**(Prices to Dealers, f.o.b. Ship. Pt.)**

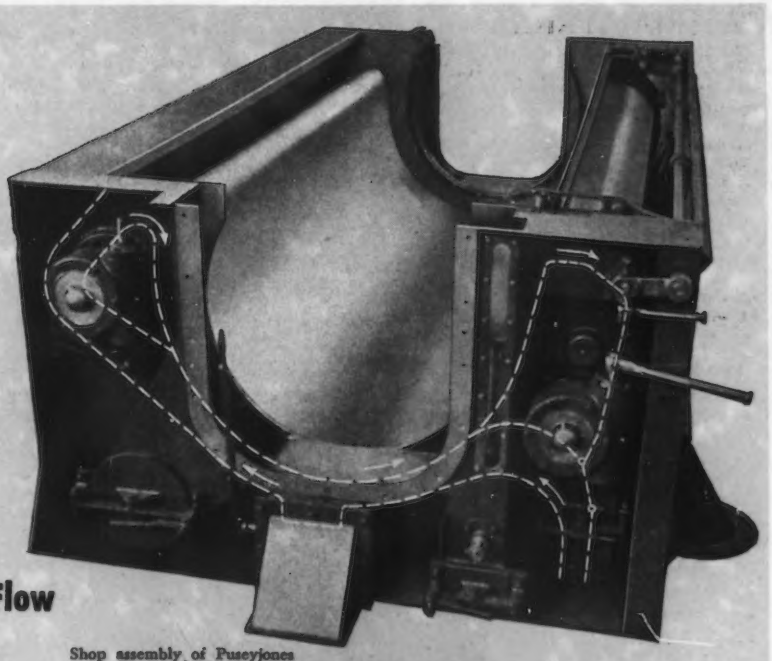
| | Per 100 lbs. |
|---|---|
| Mixed White | $4.50/$5.00 |
| Cotton Pants & Overalls | 3.50/ 3.75 |
| Thirds and Blues, Repacked | 2.75/ 3.00 |
| No. 1 Roofing Rags | 1.20/ 1.25 |
| No. 2 Roofing Rags | 1.00/ 1.05 |
| No. 3 & 4 Roofing Rags | .90/ 1.00 |

**Bagging**
**(Prices to Dealers, f.o.b. N. Y.)**
**PRICES NOMINAL**

| | Per 100 lbs. |
|---|---|
| Foreign Gunny | $4.50/$5.25 |
| Domestic Gunny, No. 1 | 4.75/ 5.25 |
| Heavy Wool Tares | 5.50/ 6.00 |
| Foreign Manila Rope | 8.00/ 8.50 |
| Domestic Manila Rope | 8.00/ 8.75 |
| Jute Strings | 7.00/ 8.00 |
| No. 1 Sisal Strings | 8.00/ 8.50 |
| Paper Mill Tares | 4.00/ 4.75 |
| Foreign Scrap Burlap | 4.00/ 4.75 |
| Domestic Scrap Burlap | 4.75/ 5.00 |
| Austr. Wool Pouches | 7.00/ 7.25 |
| New Burlap Cuttings | 7.00/ 7.50 |

# Let's talk Vats

## Fixed Circle or Stream Flow



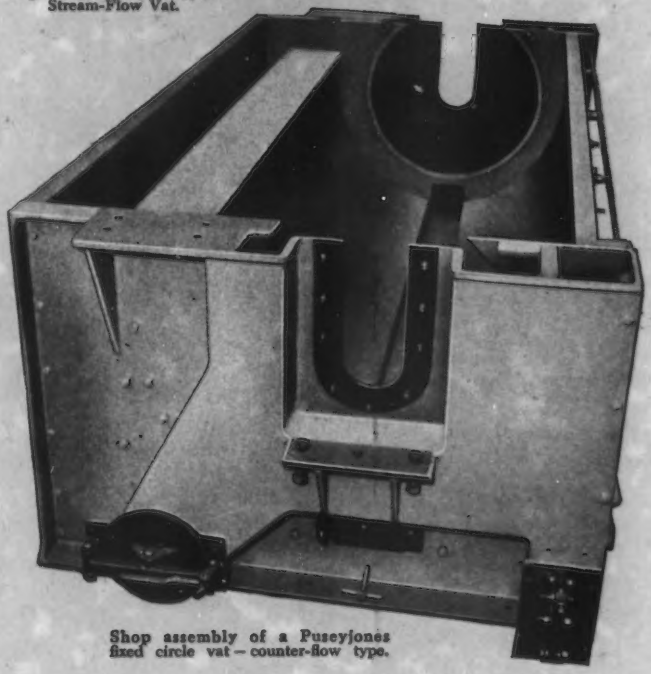
Shop assembly of Puseyjones Stream-Flow Vat.

Here at cylinder vat headquarters, our engineers have an experience that is unique in the Paper Industry.

If a fixed circle vat is what you need, the Puseyjones design — either counter-flow or direct-flow type — is planned to avoid the common limitations which are so costly in day-to-day operation. The fixed circles are supported in a manner to permit building them in or out as needed. The openings to the vat end chambers from inside the cylinder mold are unobstructed. There is free surface run-off of foam over the spill gates. Quick-opening wash-out doors provide easy access to all stock and white water passages.

If an adjustable circle vat is what you need, Puseyjones offers an outstanding development in the Goldsmith Stream-Flow Vat. The simple, rugged adjustable vat circle gives the papermaker a tool roughly comparable to the slice of the fourdrinier machine. Over 45 of these vats are now in operation or under construction . . . and every installation has resulted in greatly improved sheet formation and increased speed possibilities.

Let's talk cylinder vats now. A letter or a telephone call will put Puseyjones engineers at your service.



Shop assembly of a Puseyjones fixed circle vat — counter-flow type.

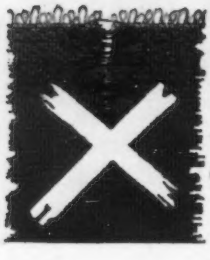
**THE PUSEY AND JONES CORPORATION**
**Established 1848. Builders of Paper-Making Machinery**
*Fabricators and Welders of all classes of Steel and Alloy Products*
**Wilmington 99, Delaware, U.S.A.**

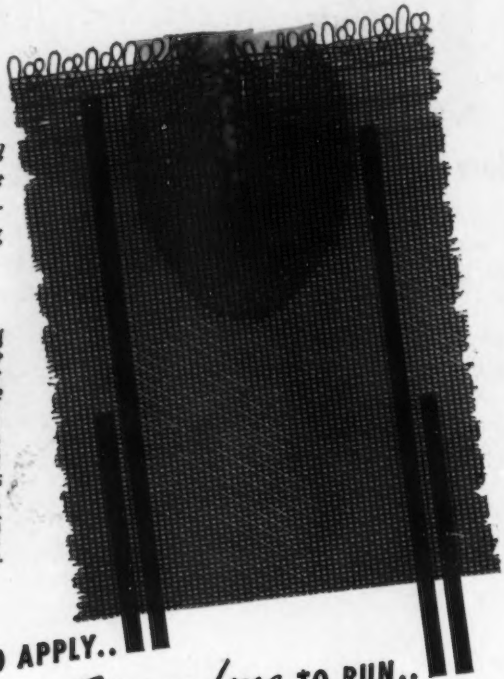
THE SIGN OF TRADE MARK SUPERIOR QUALITY

# MATERIAL PRICES

| | | |
|---|---|---|
| **Aluminum sulfate:** | | |
| coml. bags, wks.....cwt. | 1.65 | |
| iron-free, c.l. ..... | 3.25 | |
| **Alcohol, ethyl:** | | |
| tax free, dms. o.l.....gal. | 1.01 | / 1.05½ |
| deld. East Miss. | | |
| **Alcohol, methyl:** | | |
| Synthetic, Zone 1, dms. | | |
| c.l. fit. alld.....gal. | .44 | |
| **Casein, acid prec.:** | | |
| dom. sh. pt. c.l. .....lb. | .25 | / .37½ |
| imp. ex. dock .....lb. | .16 | / .23 |
| **Caustic soda:** | | |
| c.l. wks. solid, 76% cwt..... | 3.35 | |
| flak. & grd. 100-lb. drums... | 3.75 | |
| liquid 50% tanks.... | 2.55 | |
| liquid 70% tanks.... | 2.65 | |
| **China clay:** | | |
| dom. air-float. c.l. wks. ton | 10.00 | |
| water-washed, lump, filler.... | 11.00 | |
| coating ..... | 17.60 | /30.50 |
| imported, ex whse...short ton | 15.20 | /28.35 |
| **Chlorine:** | | |
| single-unit tanks, works..cwt. | 2.70 | |
| multi-unit .....cwt. | 3.20 | / 4.40 |
| **Formaldehyde:** | | |
| USP, inh. dms, c.l. wks....lb. | .0625/ | .0675 |
| l.c.l., E. wks..... | .0675/ | .0725 |
| **Fuel oil:** | | |
| Bunker C, No. 6 Cal. hvy. | | |
| tanks, refinery .....bbl. | 1.95 | / 2.15 |
| light .....bbl. | 2.00 | / 2.25 |
| **Hydrogen peroxide:** | | |
| USP, 35% cbys. E. of Miss. lb. | .23½/ | .26½ |
| **Lime:** | | |
| hydrated, bags, wks. .....tons | 13.50 | |
| **Rosin:** | | |
| B gum, drms, c.l. Savan..cwt. | 7.00 | / 9.00* |
| K, M, N .....cwt. | 7.50 | / 9.49* |
| FF, wood, do.....cwt. | 6.80 | / 7.30* |
| * OPS Ceiling, CPR 52. | | |
| **Rosin size:** | | |
| 70%, gum & pale grds, tank cars, south, sh. pt.....cwt. | 6.40 | / 6.50 |
| **Salt cake:** | | |
| dom. bulk, c.l. wks.....ton | 17.00 | |
| wks. frt. all.....ton | 20.00 | /22.00 |
| **Soda ash:** | | |
| light, 58%, bags, wks..... | 1.50 | |
| bulk ..... .....cwt. | 1.20 | |
| **Sodium silicate, 40°:** | | |
| turbid. c.l. wks.....cwt. | 1.30 | / |
| l.c.l. wks. ..... | 1.60 | / 1.85 |
| **Sodium peroxide:** | | |
| dms. c.l. E. of Miss.....lb. | .21 | |
| l.c.l. do. .....lb. | .21½/ | .22 |
| **Soybean, protein:** | | |
| chem. isol, wks, c.l., bags..lb. Cinn. and Chic. | .25 | / .29 |
| **Sulfuric acid:** | | |
| 60° Be. cbys. c.l. wks.....cwt. | 1.75 | / — |
| l.c.l. wks. .....cwt. | 2.05 | / 2.85 |
| **Sulfur:** | | |
| crude, c.l. mines, contract, long ton | 21.00 | /22.00 |
| f.o.b. vessels Gulf ..... | 22.50 | /23.50 |
| **Sulfur dioxide:** | | |
| liquid, coml. cyl. wks.....lb. | .09 | |
| multi-unit cars .....lb. | .0535 | |
| **Starches:** | | |
| pearl corn, bags, c.l. wks...cwt. | 6.48 | / — |
| white dextrines, c.l. wks...cwt. | 7.87 | / — |
| potato, Idaho, c.l. wks....cwt. | nominal | |
| potato, Maine, c.l. wks... cwt. | nominal | |
| tapioca, conv. dextrines ..cwt. | 8.50 | / 9.00 |
| **Talc:** | | |
| domestic, 50-lb. sacks, c.l. wks. .....ton | 25.00 | /30.00 |
| **Titanium dioxide:** | | |
| anastase, c.l. deld., bags...lb. | .21 | / .21½ |
| l.c.l. deld. .....lb. | .22 | / .22½ |
| rutile, c.l. deld. .....lb. | .23 | / .23½ |
| l.c.l. deld. .....lb. | .24 | / .24½ |


*The Lindsay method (right) uses a light layer of plastic instead of wire lacing (below) to contain the break.*





*Half as Long* TO APPLY.. *Twice as Long* TO RUN..

Sometimes the advantage is even greater with Lindsay's new, proven method of repairing breaks in the edges of Fourdrinier wire cloth. A typical experience shows that several better repairs can be completed within five minutes, often lasting many days longer. You yourself can easily perform the operation at a very low cost. Ask us for the brief, remarkable details . . The Lindsay Wire Weaving Company (*Serving the Paper Industry Since 1903*), Cleveland 10, Ohio.

*Lindsay* WIRES

FOR PAPER MILLS

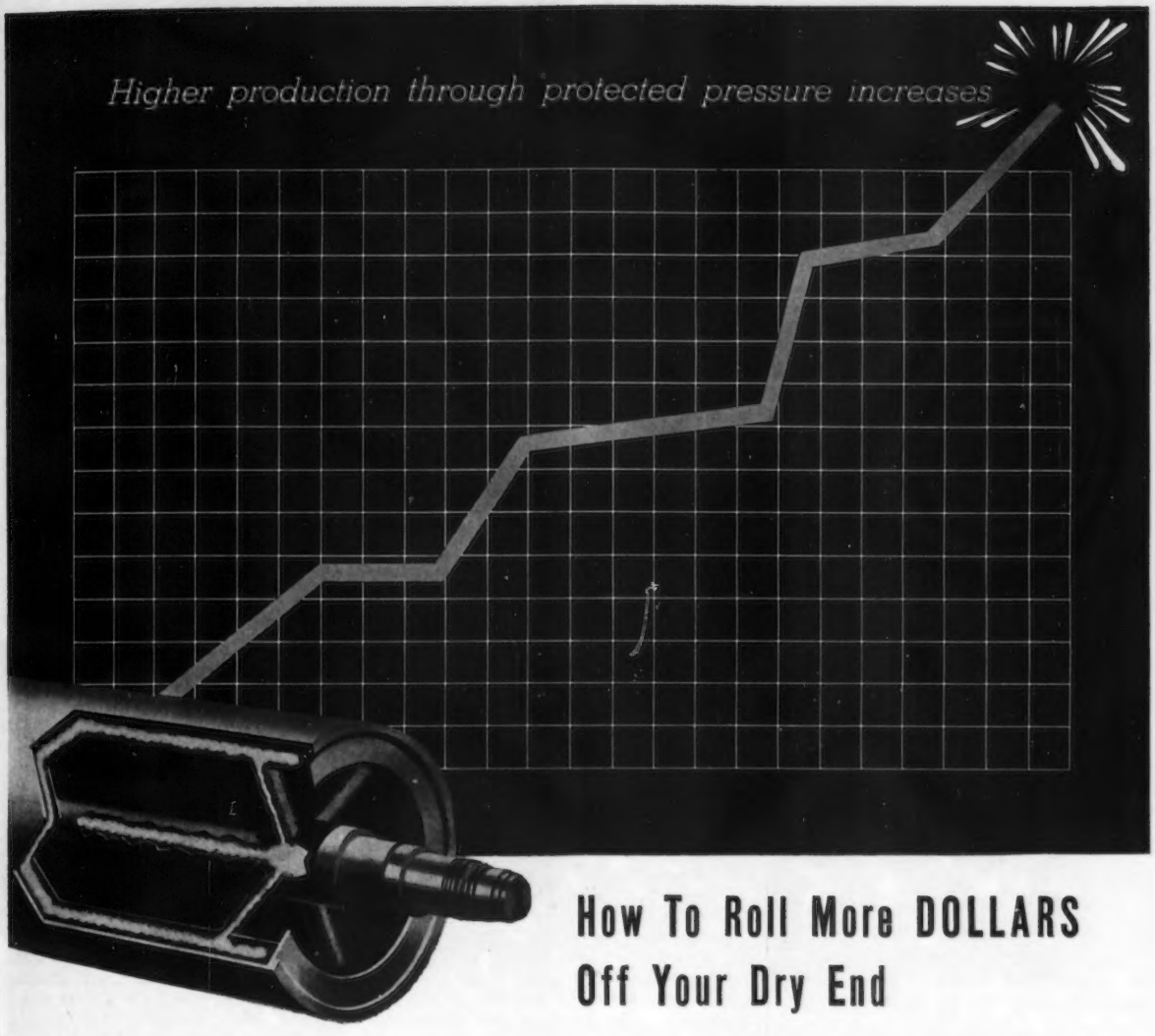

# WHAT'S NEW IN PUBLICATIONS

**Tables of Chemical Kinetics, Homogeneous Reactions.** National Bureau of Standards Circular 510, xxiv, 731 pp. $4. Critically evaluated compilation of the available numerical data on rates and rate constants. Stress is laid throughout on experimentally ascertained facts. Data depending on interpretations are generally not included. Supplementary tables give additional useful numerical information. U. S. Government Printing Office, Washington 25, D. C.

**Preferred Unit Steam Generator—Designed for 25 Years of Economical Service.** Booklet 2000. Sales copy illustrated with typical installations. Includes technical details. Preferred Utilities Mfg. Corp., 1860 Broadway, New York 23, N. Y.

**Pie-Flex Portable Mixer and Agitator.** Bulletin No. 52A. Contains table of motor and propeller sizes for different shaft speeds, and lists typical applications. Process Industries Engineers, 200 Whitefield Bldg., Pittsburgh 6, Pa.

**The Messenger.** Bulletin No. 294, March 1952. Features: Shartle Duo-Cycle re-

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**Townmotor Overhead Guard.** Data Sheet. Towmotor Corp., 1226 E. 152nd St., Cleveland 10, Ohio.

**Towmotor Carton Lift.** Bulletin. Sales and technical copy on "another example of Towmotor versatility." Towmotor Corp., 1226 E. 152nd St., Cleveland 10, Ohio.

**Radiation Fan Cooled Speed Reducers.** Bulletin, 28 pp. Gives complete details on operating data, dimensions, models available, typical installations and part descriptions. National Transmission Products, Inc., 684 Broadway, New York, N. Y.

**Neptune Meters Type S for Industrial Liquids.** Bulletin 566-/. Design details and specifications. Illustrated. Neptune Meter Co., 50 W. 50th St., New York 20, N. Y.

**The Sur-Ten Meter.** (A New Surface Tension Measuring Instrument.) Joseph B. Kushner Electroplating Engineer, 115 Broad St., Stroudsburg, Pa.

**Foxboro M/40 Controllers.** Bulletin, 32 pp. Contains 114 illustrations and diagrams, helpful in understanding and applying the advanced principles of automatic control. Each instrument is pictured with a typical process diagram and a characteristic chart record. Foxboro Co., 36 Neponset Ave., Foxboro, Mass.

**Millions of Square Feet of Floors Without Flaws** — Modern Maintenance Methods by Horn. Brochure. Twelve-page guide for care of floors. A. C. Horn Co., Inc., Tenth St. and 44th Ave., Long Island City 1, N. Y.

**Santicizer 3, a Sulfonamide Type Plasticizer.** Technical bulletin. Includes typical formulations for nitro-cellulose heat-sealing coatings and paper coating lacquers, polyvinyl acetate adhesives; and zein metallic decorative paper coatings, back-coatings for pressure sensitive tapes and hot melts for paper adhesives. Monsanto Chemical Co., St. Louis 4, Mo.

**Guide to Better Packing and Shipping Methods.** Pocket size catalog No. 15. Revision of an older catalog out of print since 1949. Signode Steel Strapping Co., Chicago 47, Ill.

**Putting Air to Work.** Sixty-page general product and application catalog on Westinghouse-Sturtevant products for air-conditioning, cleaning, and handling. Westinghouse Electric Corp., Box 2278, Pittsburgh 30, Pa.

**Series 42P Tachometer Indicators.** Technical data sheet No. 42P. Describes Tachometers for speed measuring applications and typical applications. Metron Instrument Co., 432 Lincoln St., Denver 9, Colo.

**Prufcoat Protective Coatings.** Catalog. Includes a list of chemical agents against which Prufcoat has been found effective, case history studies of five different types of applications and a three point analysis of the advantages of maintenance painting done the Prufcoat way. G. Russell Hersam, General Sales Manager, Prufcoat Laboratories, Inc., 50 E. 42nd St., New York 17, N. Y.

# NEW EQUIPMENT

*(Continued from page 36)*

## Super Concrete Bins

Characteristic feature of the new storage bins is the Super-Concrete Stave with diagonal ends. The product of Neff & Fry Co., 163 E. Central Ave., Camden, Ohio, and made of artificial stone described as rocklike concrete, the staves are guaranteed by the manufacturer to have 5,000 p.s.i. crushing strength after 28 days.

Formed of ideal deposits of sand and gravel and highest quality cement mixed with pure water to exact formula, the concrete is molded under great hydraulic pressure of approximately 140 tons, and the staves finally cured to effect complete crystalization.

Visible evidence of the load-bearing ability of the silos is seen in installations where superstructures and machines are mounted on them without extra supports, proving the claim to "the strength of pillars."

Pictured is a new installation of four 30′ x 60′ chip silos at Chesapeake Corp., West Point, Va.

Due to the density of the concrete, the walls are said to remain dry enough for the storage of most flowable bulk materials. When absolute imperviousness is required, waterproofing can be provided, also staves of special design.

Write for folder, "Bins With the Strength of Pillars."

## Water Treatment

N-Sol Processes (activated silica sol) have been introduced by Philadelphia Quartz Co., Public Ledger Bldg., 6th and Chestnut Sts., Philadelphia 6, Pa., as coagulant aids in clarification of raw and waste waters.

Involved in the processes are various methods of preparing the sol with N° Silicate of Soda and a reacting chemical such as ammonium sulphate, alum, chlorine, sodium bicarbonate. According to the manufacturer, use of the sol

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speeds the formation, size, density and strength of the floc which enmeshes suspended materials and settles rapidly, removing greater quantities of impurities.

The company holds several patents on the processes and licenses are granted to users without royalty fee. Descriptive bulletin (52-19) is available.

*Registered trademark

## Gas, Oil Burner, Programming Control

Fireye Programming Control Type 26RJ8 is designed to provide automatic starting and programming control for commercial and industrial gas, oil, and combination gas/oil burner equipment. The product of Combustion Control Corp., 77 Broadway, Cambridge 42, Mass., it is used with the new Firetron Scanner Type 48PT1 to protect burner installations from the hazard of flame failure. The control automatically starts a burner in operation and programs a sequence of pre-purge, ignition-on, fuel valve delay, post-ignition timing, and post-purge.

The control is designed to provide continuous operation under the most exacting ambient conditions to be encountered on industrial installations. It features fail-safe circuits through which component failure within the equipment causes instantaneous shutdown and prevents start-up under any unsafe condition within the entire burner system. Terminal connections are available for directly handling flame failure alarm and modulating motor. Plug-in construction of the chassis provides for simplified replacement and maximum accessibility for examination or adjustment.

## Copper Brazing Alloy in Paste Form

Phos-Copper*, a free-flowing brazing alloy with a low melting point for brazing operations on copper and copper alloys, is available in paste form from Westinghouse Electric Corporation. Box 2278, Pittsburgh 30, Pa.

An alloy of copper and phosphorus, its fluidity and wetting properties are said to provide good capillary action that enables it to penetrate tight-fitting joints instantly to form a strong, ductile bond. On most copper applications, no flux is required.

The new brazing paste is finely powdered Phos-Copper suspended in a petroleum jelly. A small amount of this paste placed between the pieces being joined takes the place of a brazing rod, and the joint need only be heated until the brazing filler metal flows. It is designed for resistance brazing where it can be conveniently pre-placed and is packaged in collapsible one-pound tubes and in 5- and 30-lb cans.

This brazing alloy also is available in rod and wire sizes from 1/16- to ¼-inch diameter and in rings and strips (for making special shapes).

*Registered trademark

## New St. Regis Installations

Dilts Machine Works, Division of The Black-Clawson Co., Fulton, N. Y., recently installed Kohler System continuous unwinding and winding equipment in connection with a polyethylene extruder laminator in the Carthage, N. Y., mill of the St. Regis Paper Co. In addition to the two reels, a specially designed Dilts trim slitter was installed which permits simultaneous movement of both slitter wheels or the separate movement of one slitter wheel, without disturbing the slitting operation while the laminator is running.

The ability to operate such a machine without stopping or slowing down means greatly decreased waste in addition to increased production and improved quality. It eliminates clogging of the extruder head due to shutdown for roll changes with the resultant increase in saleable paper. Spoilage from adjustments necessary on the extruder after stopping is no longer a problem. It has been found also that quality is improved because running at an even speed with no slowing down or stopping permits better lamination of the PE to the paper.

# Broadening Uses of Multiwall Paper Shipping Sacks[1]

**Frank Pocta**

Executive Secretary, Paper Shipping Sack Manufacturers' Assn., New York, N. Y.

Almost one hundred years ago, the first Paper Shipping Sacks were made of Manila rope paper. They were all of single ply construction, with pasted bottoms and open tops, made for the shipment of family flour, meal, poultry and livestock feeds. Eventually rock products were added to the list.

During the first World War, Manila rope for the manufacture of Shipping Sack Paper became scarce and the Industry turned to the production of double wall Composition Rope and Kraft Sacks for Rock Products.

In the year 1924, the curtain was raised on a new packaging discovery—The Multiwall Paper Shipping Sack—of three, four, five and later six ply construction.

Greater flexibility and strength were achieved by the use of several walls of relatively light weight, rather than two walls of heavier paper. Shipping Sack Kraft of forty, fifty and sixty pounds basis weights were ingeniously arranged and fabricated in tube form one within the other so that each ply would bear its share of the burden, making a sum total of great strength and flexibility. Strong flexible closures were effected by the use of bound over creped kraft tape and stitched with heavy cotton thread reinforced with cotton filler cord to eliminate sifting. In the year 1930 multiwall constructions with pastel closures, were added to sewn types of closures.

The Multiwall Paper Shipping Sack offered the packaging world a versatile container with unlimited possibilities for applying just exactly the right amount of strength and with the added use of specially treated plies, the exact type of protection needed to guarantee safe delivery of many different types of products without the necessity of overpackaging, and yet without the danger of underpackaging.

Furthermore, various types of automatic weighing, packing and closing machines were designed to save packers untold millions of dollars in time and labor. And because multiwalls are sift proof and dustless, they gave more than a full measure of satisfaction in cleaner production and warehousing.

Multiwalls also provided efficient barriers against all forms of infestation and contamination from without for such products as flour, sugar, livestock and poultry feeds and many other foods and agricultural products.

In the year 1934, American industry demanded about 250 millions of Multiwall Sacks for the packaging and shipment of considerably less than one hundred products. In the year 1951, American industries indicated their confidence in Multiwalls by demanding more than 2 billions 500 millions of Multiwall Sacks for the packaging of approximately 400 different products in sacks with capacities ranging from 25 lbs. upwards to 100 lbs. This represents an increase in demand of more than eight hundred percent since the year 1934.

Multiwall packaging of food and agricultural products takes the lead, with chemicals and building materials following close second and third, with minerals fourth.

Multiwall Sacks are custom made to suit the exact requirements of each industry served and individual shippers in these industries, because of varying distances travelled by their products, the climatic changes and different methods of handling to be met, have multiwalls built exactly suited to their particular requirements. This means thorough analysis of product characteristics, shipping practices, storage problems, labor saving devices, material cost and packaging cost studies. And automatic filling, weighing and closing machines for valve type as well as open top type sacks are designed for accuracy, cleanliness and speed and keep abreast of modern industrial packaging progress.

The Multiwall Paper Shipping Sack Industry is embarked upon a program of expansion with but one view in mind—to discover through technological research and sound engineering practices the exact multiwall construction most suitable to deliver the customer's product protected and at the lowest over-all cost.

Multiwalls can be specifically built to protect the product they carry, from all hazards met from the time the sack is filled until it is delivered, whether it be at home or in Cape Town, South Africa.

The reason why the use of Multiwall Paper Shipping Sacks has grown over 800 percent since 1934 is because the Paper Shipping Sack Industry is producing a shipping container delivering successfully hundreds of vital American products, not only at lower overall cost but primarily because they are providing the user with the highest standard of protective packaging for his products.

[1] Presented before the Packaging Conference of the American Management Assn., Atlantic City, N. J., April 1-3.

# Cement, Other Rock Products

**L. O. Robinson**

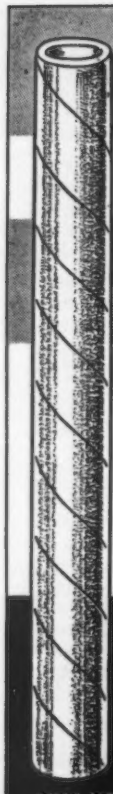
(Retired) Sack & Claim Supervisor, Universal Atlas Cement Co.

Within a year after the multiwall bag made from kraft paper was adopted and made available for use, the percentage of shipments in paper packages nearly doubled and this percentage has increased each year until finally the use of cloth sacks as containers for these products has been discontinued.

The first multiwall bags used by the industry were of five ply construction consisting of four sheets of paper each having a basis weight of 40 pounds and one sheet of 50 pounds basis weight, the heavier sheet being used as the outer ply.

It is suggested that bags having a total of 180 pounds basis weight be constructed of either three sheets each having a basis weight of 60 pounds, or one 50 pound, one 60 pound and one 70 pound basis weight sheet—total 180 pounds . . . while bags with a total of 170 pounds basis weight should have one 50 pound basis weight sheet and two 60 pound basis weight sheets or two sheets of 50 pounds basis and one sheet of 70 pound basis weight in either case a total of 170 pounds basis weight.

This change has been suggested in order to get away from using 40 pound paper—there being greater uniformity in papers of 50 pound basis weight and up. Laboratory tests confirm this, but after all the real test is use in the field,



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THE NOBLE & WOOD MACHINE CO.

*Paper Mill Machinery*

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FOR ALL EQUIPMENT EXPOSED TO CORROSION BY SULPHITE ACIDS OR OTHER CORROSIVE AGENTS
MICHIGAN STEEL CASTING CO.
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and when we tried them out there didn't seem to be enough difference in breakage in packing and in number of complaints from customers to warrant a change at this time.

With all the new devices coming on the market, I would not be at all surprised to see a very radical change take place in the paper package for cement and other rock products. Knowing some of the problems that are encountered in packing paper bags through a small valve, I believe that eventually a machine will be perfected that will pre-weigh the product, place it in a paper bag of open end construction, sew the open end together and deliver the package to the conveyor for loading into the car. One man could feed the empty bags into the machine, the weighing of material, filling of package and closing to be automatic, the package would not be handled again until it arrived in the railroad car ready for stacking.

# Chemicals


**Richard W. Lahey**
Manager, Packaging & Materials Handling, American Cyanamid Co.


As a result of the successful experience of the Rock Products Industry in using multiwall paper shipping sacks for their products, fertilizer manufacturers started experimenting with these containers in 1929.

As the multiwall paper shipping sack proved itself in the fertilizer industry, the chemical industry started to use this container for packing heavy chemicals such as sulfate of alumina, soda ash, sulphur, zinc oxide, as well as detergents, carbon black, etc. Later the bag manufacturers, looking to broaden their markets, were able to increase the protective properties of their container.

The improvements effected by the bag manufacturers include, among others, the following: 1. Reduced contamination by providing a tighter package; 2. Increased protection against the absorption of water vapor; 3. Increased mechanical strength of the container to provide greater strength against transportation abuses; 4. Increased protection to the paper against chemical action of the product.

As a result of such improvements, the multiwall paper shipping sack found ever widening acceptance in the chemical field. Among other products, it was adopted for packing calcium chloride, colors and pigments, rubber accelerators, molding compounds, resin adhesives, all of which are quite sensitive and many of which are in a much higher price bracket.

The development of automatic and semi-automatic bag packaging machinery played a substantial part in increasing the chemical markets for multiwall paper shipping sacks. The valve bag fillers, combined with the tuck-in sleeve construction, automatic scales for filling open mouth bags, and sewing machinery for closing them are examples of the equipment which has been able to reduce packing cost.

By still further adding to the protective qualities of the present bag, we can see still larger chemical markets for these containers. Undoubtedly this must be a partnership effort because some of these greater protective qualities may most easily be provided by the use of new chemical additives. Specifically, we could use bags having greater resistance to the transmission of water vapor, bags having greater mechanical strength in the form of increased resistance to localized impact such as puncture and even snagging, bags that can be opened and the product dispensed with no possible contamination from paper, thread or outside dirt, bags with more satisfactory valve closures, and bags with reclosing features.

We can also foresee greater acceptance of these containers if the accuracy of the automatic weighers and packers can be increased.


*(To be concluded next week)*



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## FINANCIAL

*St. Regis Paper Co.* net profit for the first quarter of 1952 amounted to $3,504,599. This compared with $4,836,486 reported for the first quarter of 1951 and $4,026,358 for the final quarter of last year.

Net sales in the first three months of this year totaled $47,697,487 against $48,393,839 in the first quarter of 1951 and $49,877,251 in the final quarter of last year. For the twelve-month period ended March 31, 1952, net sales amounted to $195,259,265 and net profit to $15,464,147, which compared with $168,620,073 and $14,444,451 for the twelve-month period ended March 31, 1951.

The first quarter drop in net profit resulted from higher costs, particularly wages and materials in some directions. While inventories were reduced by customers, end use of the company's products continues high and prices remain firm.

In considering first quarter results, consideration should be given to the fact that production of the Oswego kraft paper mill figured in results for that period of last year, but was missing this year. At the same time, the new Pensacola paper machine, which will more than replace that tonnage, has only come into production since the end of the quarter.

Stockholders were told that the company has now reached its goal of complete integration of sulphate pulp requirements with kraft paper manufacture, and that during this year the major expansion program will be completed.

ROBERT GAIR COMPANY, INC.
AND SUBSIDIARY COMPANIES
155 East 44th Street, New York 17, N. Y.
*Report to Stockholders for First Quarter of 1952*

| | *Quarter Ended Mar. 31,'52* | *Quarter Ended Mar. 31,'51* |
|---|---|---|
| Net Sales to customers (U. S.) | $17,039,958 | $21,176,793 |
| Income before deductions shown below | $ 2,926,398 | $ 4.097,322 |
| *Deduct:* | | |
| Depreciation of buildings and equipment | 358,951 | 318,856 |
| Dividend on preferred stock of subsidiary consolidated | 16,728 | 27,915 |
| | $ 375,679 | $ 346,771 |
| Income from U. S. operations before estimated Federal taxes on income | $ 2,550,719 | $ 3,750,551 |
| Deduct — Estimated Federal taxes on income | $ 1,798,000 | $ 2,360,000 |
| | $ 752,719 | $ 1,390,551 |
| Income of Gair Company Canada Limited and subsidiaries after estimated Federal and Provincial taxes on income and preferred dividend at applicable official rate of exchange | 270,646 | 330,427 |
| Company's equity of 60% in the consolidated net income of Southern Paperboard Corporation and subsidiary | 256,601 | 345,157 |
| Income for the period | $ 1,279,966 | $ 2,066,135 |
| Deduct — Preferred dividend for the period | 89,644 | 89,644 |
| Income applicable to common stock | $ 1,190,322 | $ 1,976,491 |
| Income per share on 1,779,888 shares of common stock outstanding | $.67 | $1.11 |

The above statement of income is subject to adjustment on audit at the end of the year.

In preparing its annual consolidated financial statements, the company's policy is to include all subsidiaries of which the common stock is wholly owned by the company, except Gair Co. Canada Ltd. and its subsidiaries. This policy has been followed in the foregoing interim statements, and there have also been included the interim earnings of Gair Co. Canada Ltd. and its subsidiaries and of Southern Paperboard Corp. and its subsidiaries on the bases indicated.

*St. Lawrence Corp., Ltd.,* is offering a new issue of $22 million 5 percent first mortgage sinking fund bonds, Series A maturing April 15, 1972 at 100 and accrued interest by a syndicate of Canadian investment dealers headed by Dominion Securities Corp., Ltd., and W. C. Pitfield & Co., Ltd. In connection with the offering, the prospectus states the company proposes to issue and sell in the United States, by private placement, $8 million principal amount of 4¾ percent first mortgage sinking fund bonds Series B, payable in U.S. funds.

Proceeds of sale of the Series B bonds, together with part of the proceeds of the Series A bonds, will be used by the company in payment of bank loans incurred or assumed in connection with acquisition of the assets and undertakings of the predecessor companies and the balance of the proceeds of Series A, estimated at $11,600,000 will be added to the general funds of the company and used for general corporate purposes.

*Lily-Tulip Cup Corp.* reports for the three months ended March 31, 1952, estimated net income of $505,919.00 equal to $1.12 a share on 448,713 shares outstanding. This compares with estimated net income of $835,676.00 for the same period in 1951 equal to $2.14 a share on 373,693 shares then outstanding.


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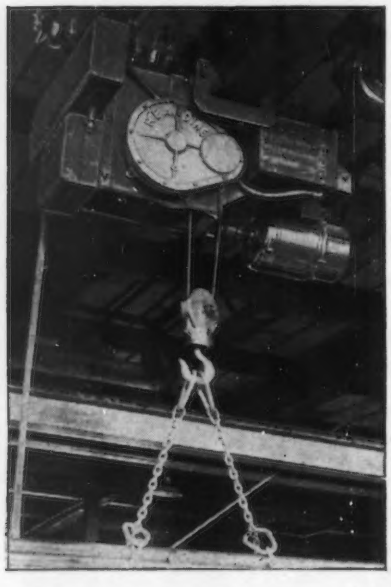

Six men were moving these steel bars from flat cars to stockpile, and thence to cutting saws and shipping carriers. To speed handling, a *Reading* Engineer was called in. A *Reading Electric Hoist,* right angle mounted, plain trolley, on a single I-Beam motor driven crane was recommended and installed. Now the job is handled by only three men . . . bars move faster . . . *and the three "extra" men have been switched to other productive jobs!*

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Sales (less returns and allowances) for the three months ended March 31, 1952 were $10,607,134.00 or as compared to $12,106,886.00 for the first three months in 1951.

*Scott Paper Co.* net sales of paper products for the first quarter of 1952 were $32,405,048, an increase of 7 percent over the first quarter of last year. Net pulp sales were $5,263,386 (a decrease of $1,315,449) reflecting lower ceiling prices and increased tonnage from Soundview consumed in Scott's Paper Mills.

Net income for the 1952 quarter, after provision for taxes on income, was $2,527,327, equal after preferred dividend requirements to 81 cents per common share. This compares with net income of $2,668,460, or 85 cents per share for the first quarter of 1951 for Scott and Soundview added together. Higher materials and operating costs, together with lower ceiling prices on pulp, more than off-set the increased operating efficiencies and the price adjustments the company was able to make in October 1951 in the selling prices on the company's paper products.

Scott is moving forward with its plans for the construction of a paper mill adjoining the plant of its Soundview Division at Everett, Wash., and it is expected that ground will be broken for the paper mill during the summer. It is hoped that one paper machine will be in operation by the latter part of 1953, he added.

*Scott Paper Co.* has declared a quarterly dividend of 60 cents per share on the common shares payable June 12 to shareholders of record May 29th. Directors also declared the regular quarterly dividend of 85 cents per share on the $3.40 cumulative preferred shares and the regular quarterly dividend of $1 per share on the company's outstanding $4 cumulative preferred shares, both dividends payable August 1 to shareholders of record July 17.

*Minnesota and Ontario Paper Co.* reported consolidated net income after taxes for the first quarter of 1952 of $1,193,503, compared with $1,482,067 for the first quarter of 1951. Net earnings per share totaled 93 cents for the first quarter as compared with $1.15 for the first quarter of 1951.

Net sales were $14,695,793, or $350,367 more than first quarter sales.

Increased paper prices and volume resulted in greater net sales, which were more than offset by increased and raw material costs, loss of exchange premium on Canadian products and substantially reduced volume of insulite products, explain why net income was down while sales were up.

Net worth at the end of the first quarter of 1952 was $53,422,227 as compared with $50,510,525 in 1951.

*Mead Corp.* has reported net profit of $1,195,260 for the 12 weeks ended March 23, 1952. This compares with $1,616,797 for the 12 weeks ended

## AMERICAN PAPER AND PULP ASSOCIATION
## PAPER PRODUCTION RATIO REPORT

(Production as per cent of normal capacity)

### COMPARATIVE WEEKLY SUMMARIES

| | | | | | |
|---|---|---|---|---|---|
| | Apr. 5 | Apr. 12 | Apr. 19 | Apr. 26 | May 3 |
| 1952 | 93.8 | 91.7 | 90.2 | 92.8r | 87.8 |
| | Apr. 7 | Apr. 14 | Apr. 21 | Apr. 28 | May 5 |
| 1951 | 102.8 | 103.1 | 104.3 | 100.9 | 102.3 |

### COMPARATIVE MONTHLY SUMMARIES

| Year | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Year Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1951* | 99.3 | 101.3 | 101.9 | 102.8 | 102.2 | 100.1 | 88.6 | 97.7 | 94.3 | 100.3 | 98.0 | 90.0 | 98.0 |
| 1952* | 97.6‡ | 97.9‡ | 96.1‡ | 91.4‡ | | | | | | | | | |

### COMPARATIVE YEARLY SUMMARIES

| | 1945 | 1946 | 1947 | 1948 | 1949 | 1950* | 1951* | 1952* |
|---|---|---|---|---|---|---|---|---|
| Year to Date | 88.3 | 100.2 | 105.3 | 100.9 | 90.3 | 95.3 | 101.6 | 95.5 |
| Year Average | 89.4 | 101.1 | 104.3 | 96.2 | 88.6 | 95.8 | 98.0 | |

‡ Preliminary.
* Beginning with January 1950 the ratio is on the new basis of normal 6 and 7-day capacities.
r Revised.

### PAPERBOARD OPERATING RATIOS †

| | | | | | |
|---|---|---|---|---|---|
| | Apr. 5 | Apr. 12 | Apr. 19 | Apr. 26 | May 3 |
| 1952 | 83 | 81 | 81 | 83 | 82 |
| | Apr. 7 | Apr. 14 | Apr. 21 | Apr. 28 | May 5 |
| 1951 | 106 | 102 | 107 | 105 | 107 |

| Year | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Year Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1951 | 102 | 105 | 104 | 105 | 104 | 103 | 84 | 94 | 86 | 87 | 82 | 75 | 94 |
| 1952 | 81 | 86 | 85 | 82 | | | | | | | | | |

All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

† Per cents of operation based on "inch-hours" reported on a 6-day basis to the National Paperboard Association.

March 25, 1951. Net profit amounted to $1.01 per share after all taxes and preferred dividends for the 12 weeks just closed on the 1,124,873 common shares outstanding. This compares with $1.37 in the comparable previous period on an equal amount of shares outstanding.

Net sales amounted to $25,576,934, which compares with $26,018,510 a year ago.

Other income was $124,588 as compared with $194,412.

Most of the difference in net sales was due to the disposal of the Manistique Pulp and Paper Co., whose sales were included in the first quarter of 1951, but not in the first quarter of 1952. The decline in per-share earnings, 14c is due to the increased Federal Income and Excess Profits Taxes and 22c to increased costs not compensated for by increased prices.

The figures do not include non-recurring profits of $860,375 equal to 77c per share after taxes resulting from the sale of the Manistique, Mich. plant.

## OBITUARIES

**Col. Hans Lagerloef,** 72, died May 11 at his home in Weehawken, N. J.

Col. Lagerloef, born in Sweden, came to the United States in 1903, and began a career in the field of international trade. He later founded the Lagerloef Trading Co. in New York and was instrumental in developing woodpulp and paper trade between Sweden, Finland and the United States. He was one of the world's greatest philatelists and won numerous awards for his stamp collections.

Sweden's King Gustav appointed him as a Commander, First Class, of the Royal Order of Vasa; Finland made him a Commander, First Class, of the Order of the White Rose, and the 7th Regiment appointed him as an honorary colonel of the State Guard in 1943.

Surviving are his widow, Mrs. Clara Lenz Lagerloef, and his children, Mrs. M. L. Fernstrom and Eric Gustav Lagerloef.

**Irene Bullock,** 72, wife of Warren B. Bullock, manager of the Import Committee of the American Paper Industry, died May 5 in St. John's Hospital, Long Island City, Queens, after having suffered a heart attack while returning from Kingsport, Tenn.

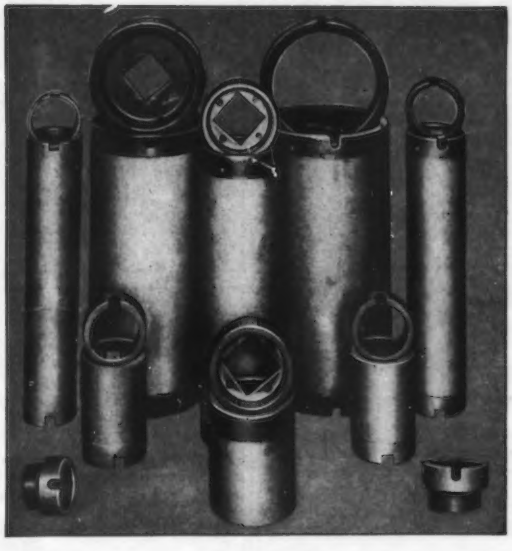
**Maitland C. Boswell,** 73, internationally known in the field of chemical engineering and in 1929 the scientist who perfected a process for the recovery of free sulphur from sulphur dioxide as well as the discoverer of a new chemical reaction which would be used in making dyestuff from coal tar in 1922, died in Toronto recently. He contributed countless articles on scientific and chemical subjects to periodicals.

He was graduated from the School of Practical Science, University of Toronto, in 1900 and took postgraduate studies at Cornell University as well as Harvard University, joining the staff of the University of Toronto as a demonstrator in Applied Chemistry. He was made a full professor in 1926 and became the head of a chemical department at the university. In 1948, he retired after 40 years with the university.

**Stanton W. Todd, Sr.,** 74, for many years associated with the Central Michigan Paper Co., died recently at his summer home in Silver Creek, N. Y. He was chairman of the board of the paper company.

**Frank B. Cummings,** 78, former president of Storrs & Bement Co., Boston, and secretary of the New England Paper Merchants Assn. and the Boston Paper Trade Assn. for a number of years, died May 8.

**P. F. J. Dolan,** 55, secretary-treasurer of Alliance Paper Mills, Merritton, Ont., died recently. He was born in Stratford, Ontario, in 1897 and attended the Stratford Separate Schools and Collegiate Institute. He joined the old Lincoln Mill as office manager in 1923. Shortly after its reorganization as the Lincoln Pulp and Paper Mills in 1926, he became office manager, and after several promotions in Alliance Paper Mills, was eventually appointed secretary-treasurer in 1946 and to the same position with Don Valley Paper Mills after its acquisition by Alliance in 1944.

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CORES
CAPS

**Straight wound paper cores made in sizes from 2" to 10" inside diameter with any thickness wall required.**

**Long draw protected slot caps of heavy gauge steel in all standard sizes.**

**Heavy duty caps with reenforced square hole. This patented feature of reenforcement gives added strength and durability.**

**Samples of caps or cores will be gladly submitted**

**ELIXMAN PAPER CORE COMPANY, INC.**

**CORINTH, N. Y.**

# CLEARING HOUSE

## HELP WANTED

### MEN WANTED—POSITIONS OPEN

We can place—Assistant supt. Cylinder board mill, salary range $600 to $750 month; sulphite shift foreman capable of becoming night supt.; mechanical, process, project and designing engineers; asst. supt. roofing felts; asst. supt. asphalt; working foreman paper converting plant. Asst. supt. Fourdrinier mach. mill on light weight papers.

Chemists, chemical engineers and laboratory men for mills also for demonstrating and selling, including recent chemical graduates; maintenance foreman; printing foreman; industrial engineers tour boss box board mill; finishing foreman; salesmen and demonstrators; boss machine tender, Fourdrinier machines; beater engineer; back tenders and machine tenders.

**LIST YOUR CONFIDENTIAL APPLICATION WITH US to keep informed of attractive positions open in the pulp and paper mills.**

**CHARLES P. RAYMOND SERVICE, Inc.**
**294 Washington St., Boston 8, Mass.**

**SPECIALISTS IN PLACING AND IN SUPPLYING PULP AND PAPER MILL EXECUTIVES** M-16

**WORKING SUPERINTENDENT** for small fast growing Eastern mill making light weight specialties. Cylinder machine experience essential. State qualifications and salary expected. Address Box 52-76 care Paper Trade Journal. TF

### NIGHT SUPERINTENDENT

For one machine folding board mill producing 50 tons daily. 12 hour shift. $7500 yearly plus bonus. Opportunity for rapid advancement. Box 52-191 care Paper Trade Journal. M-30

WANTED—The services of a man who thoroughly understands the use and application of potato dextrine for the Paper, Textile and Pure Food Industries. Give full particulars and experience. All replies confidential. Address Box 52-179 care Paper Trade Journal. M-23

WANTED—Assistant Millwright or assistant master mechanic, willing to work, in one-machine Board Mill. Company steadily growing. Great chance for advancement for right man. State experience in first letter. Address Box 52-165 care Paper Trade Journal. TF

Wanted—Engineers and Draughtsmen by New York Consulting Engineer Designing Pulp and Paper Mills. Give Experience and Salary. Address Box 52-193 care Paper Trade Journal. TF

Wanted—Color Matcher for Coated Paper Mill. Must be thoroughly familiar with Flint, Friction Glazed, Waterproof, and similar Fancy Coated Papers; capable of taking charge of Mixing Room and Coaters, and maintain high standards of quality and production. Give experience and salary. All replies strictly confidential. Address Box 52-207 care Paper Trade Journal. M-16

## HELP WANTED

### WORKING SUPERINTENDENT

Small Southern folding board mill desires man familiar with all grades, quality and cost conscious, and able to handle help. Will consider night supt. or tour boss who has ability and experience but has lacked opportunity. Good salary plus bonus. Address Box 52-202 care Paper Trade Journal. J-6

SALARIED POSITIONS $3,500 to $35,000. We offer the original personal employment service (established 42 years). Procedure of highest ethical standards is individualized to your personal requirements. Identity covered; present position protected. Ask for particulars. R. W. BIXBY, INC. —117 Dun Bldg., Buffalo, 2, N. Y. M-16

### WANTED

Sales and Service representative for old, established manufacturer of Pulp & Paper Equipment. Territory Pacific Northwest. Prefer graduate mechanical or chemical engineer. Age 30-40. Reply to Paper Trade Journal, Box 52-203. M-23

Paper Mill in Metropolitan New York area has opening for Paper Mill Superintendent. Must be Graduate Mechanical Engineer with at least ten years' experience in modern paper mill. Salary $12,000. Opportunity for advancement. Ideal conditions. In first letter submit complete resume of personal background, education, age, and experience. Address Box 52-201 care Paper Trade Journal. M-23

Assistant Pulp Mill Superintendent — Must have technical education and practical experience. State age, education, experience and salary in first letter. Mill located in Southeastern State. Address Box 52-192 care Paper Trade Journal. M-23

PAPER BAG ADJUSTER. Experienced Sacks, printing Duplex, Triplex, Excellent Opportunity, New York City Area. Replies held confidential. Address Box 52-199 care Paper Trade Journal. M-16

WANTED: QUALITY CONTROL SUPERVISOR. Opportunity for security and advancement with well established and growing organization for competent person experienced in paper converting and printing. Laboratory work and ink formulating experience helpful though chief demand is for application on the production line. Prefer graduate chemist. Write Box 52-200 care Paper Trade Journal, giving information concerning work experience, education and relevant personal data. Replies confidential. J-5

## HELP WANTED

### Personnel Service Associates

**115 State St., Springfield 3, Mass.**
**Personnel Consultants**

**Confidential placement services for employers and employes in the pulp and paper industries and allied trades. Attractive positions and competent men always listed. (Administrative-technical-sales-general personnel)** M-16

POSITION AVAILABLE—An opening exists in the technical staff of Midwest mills producing board and corrugating medium. Applicant should be under 35 and have an academic background of chemical engineering or pulp and paper. Unless a '52 graduate, mill experience will be valuable. After a brief training, the man employed will be placed in charge of mill laboratory. Address Box 52-196 care Paper Trade Journal. M-16

## SITUATIONS WANTED

SUPERINTENDENT will take complete charge of your mill. Thirty years of practical experience manufacturing all kinds of folding boxboard and specialties on modern high speed cylinder machines. Best of references. Address Box 52-153 care Paper Trade Journal. M-16

MILL EXECUTIVE: Experienced in production of groundwood, sulphite and kraft pulps and papers and small and wide fast paper machines. Also, some medium grade fourdrinier and cylinder boards and bag mill operation. Desires change of location as manager or equivalent position. Technical education. Available on reasonably short notice. Address Box 52-195 care Paper Trade Journal. M-30

Graduate Industrial Chemist receiving another degree in Chemical Engineering in Pulp and Paper, seeks position in research, development or production and quality control in sulfate pulping. Two years mill experience. Draft exempt. Address Box 52-204 care Paper Trade Journal. M-23

Want a hard working Technical or Pulp Mill Superintendent who has been through a complete mill construction and start up. Experiences includes cooking and bleaching high grade sulfate pine, hardwood, neutral sulfite semi-chemical, and dissolving pulps. Duties during construction included setting up standards and operating procedures, specifying materials of construction, training foremen, and recommending changes in the engineers flow sheets and piping drawings. Address Box 52-204 care Paper Trade Journal. M-16

## WANTED

### WANTED

1—100" Face Yankee Dryer. Diameter 4 ft. or 6 ft. Reply Box 52-205 care Paper Trade Journal.

## RATES FOR CLEARING HOUSE ADVERTISING

**HELP WANTED—75c a line. Minimum charge $3.75.**

**SITUATIONS WANTED—75c a line. Minimum charge $3.75. If repeated ½ rate will be charged for each consecutive repetition.**

**FOR SALE—75c a line. Minimum charge $3.75**
**WANTED—75c a line. Minimum charge $3.75.**
**OPPORTUNITIES—75c a line. Minimum charge $3.75.**

**Classified advertising space may also be purchased at $5.00 per single column inch. All classified advertisements are payable in advance.**

**If box number is used—70 cents additional**

**Address replies to advertisements appearing under Box Number in care of PAPER TRADE JOURNAL, 15 West 47th Street, New York 19, N. Y.**

## WANTED

WANTED TO BUY—A small second-hand laboratory beater, hand sheet making equipment and freeness tester. State: type and age of equipment and selling price; Option of examining before purchasing. Address Box 52-183 care Paper Trade Journal. TF

WANTED: 81" PAPER CONVERTING toilet tissue winder, also Lawtomatic Jr. wrapping machine. State age, price, and condition. Address Box 52-206 care Paper Trade Journal. M-16

## FOR SALE

### FOR SALE

1—Removable Fourdrinier, Rice, Barton & Fales, 156" wide by 70' long wire, anti-friction bearings.

**J. J. ROSS COMPANY**

250 Frelinghuysen Ave., Newark 5, N. J.
Tel. BIgelow 3-3720 M-16

## FOR SALE

### FOR SALE

6 ft. x 4 ft. Oliver filter
52" Cameron slitter
84" Moore & White cutter and layboy
25" x 103" suction press roll
8 roll 84" Norwood supercalender
48" Seybold Cutter
Two 2A Bird screens
Two 40" drum Jones rotary screens, new 1940
No. 7 Nash hytor pump
36 P & J Dryers 48 x 160"
Two 14 plate Harmon screens
No. 19, 182" Cameron slitter
24" Sutherland refiner
190" Pope reel, 42" drum
84" four knife Carthage chipper
Four Thune presses
72" Noble & Wood wet machine

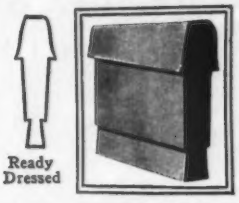
**FRANK H. DAVIS COMPANY**
**175 Richdale Ave., Cambridge 46, Mass.**
M-30

## FOR SALE

READY DRESSED

**MILL COGS**

LABOR SAVING TIME SAVING




The most economical filling that can be put in a mortise wheel

**QUICK SERVICE**
ON ALL SIZES

*Write for Instruction Sheet "G" which is free*

**THE N. P. BOWSHER CO.**
SOUTH BEND, IND.
M-16

**1 Sandusky Suction Press Roll, 120" drill face x 22" diameter, complete, with anti-friction bearings.**
**1 Sandusky Suction Couch Roll, 126" drilled face x 22" diameter.**

## FOR SALE

**BEARINGS**
72—Top and bottom Dryer Bearings 7" diameter x 12" long.

**BEATERS**
1—Dilts Iron Tub Laboratory Beater. Beater roll 14" diameter x 10½" face.

**CALENDER STACKS**
1—9 roll 68" Calender Stack.
1—72" 4 roll calender stack. (Extra heavy duty).
1—60" 3 roll friction calender stack. All iron rolls.
1—116"—12 roll calender stack.
1—7 roll 133" face.
1—9 roll 84" face Super calender stack.

**CHEST**
1—Cast Iron Stock Chest, 25' long x 6' high. (With agitator).

**CHIPPER**
1—96" Murray 4 knife Chipper—anti-friction bearings.

**CLASSIFINER**
1—Dilts Classifiner, practically new, with motor.

**CRUSHER & HAMMERMILL**
1—Murray Chip Crusher.
4—Jeffrey Hammermill.
1—#6 Mitts & Merrill Hog.

**CYLINDER MOLDS**
2—30" diameter x 72" face.
4—36" diameter x 54" face.
1—36" diameter x 96" face.
1—48" diameter x 72" face.
1—30" diameter x 92" face.
1—42" diameter x 120" face.
4—42" diameter x 130" face.
1—48" diameter x 117" face.
2—36" diameter x 110" face.

**DRIVES**
1—Jones Reducer 75 h.p.—30.8 to 1.
1—#6½ Reeves Drive.
1—#4 Reeves Drive
1—Reliance Electric Drive, complete with 5 gear head motors.

**DRYERS**
1—Complete unit, consisting of 6 dryers, 36" diameter x 38" face, including frames, gears, anti-friction bearings.
7—24" diameter x 48" face.
1—36" diameter x 143" face.
1—48" diameter x 70" face.
2—Dryers 48" diameter x 134" face.
1—24" diameter x 92⅝" face.
2—28" diameter x 48" face.
8—24" diameter x 60" face.
1—20" diameter x 61" face, complete with frames.
1—36" diameter x 67" face.
1—84" diameter x 48" face.
3—48" diameter x 88" face, with bearings and gears.
6—36" diameter x 90" face.
2—36" diameter x 120" face.
1—48" diameter x 144" face.

**FLAT SCREENS**
1—6 plate Shartle Flat Screen.
2—12 plate Flat Screens.

**FLOW DISTRIBUTOR**
1—Bertram Flow Distributor for 138" wire.

**FOURDRINIER PARTS FOR 134" MACHINE**
6—Suction Boxes, 23 table rolls. Brass Slide Rails.

**GEARS**
50 gears, for 36" diameter Dryers, 108 teeth 3⅛" face.

**GUILLOTINE CUTTER**
1—60" Cutter.

**JORDANS**
1—Horne Jordan.
2—#1 Jones High Speed Jordans, with 75 h.p. motors, new 1948.
4—Noble & Wood Mammoth.
1—#2 Emerson anti friction bearing.
1—#6 Emerson.

**LIME SLUDGE FILTERS**
2—IMPCO Lime Sludge Filters, vacuum type, 5' diameter x 4' face.

**MOTORS**
Write us regarding your requirements.

**PRESSES**
3—Sets Primary Presses, complete, 145" face. Anti-friction bearings. Also all types of rolls for 145" wet end.

**PULLEYS**
Various cone and assorted pulleys.

**PULPERS**
1—Jones Pulper. Complete with motor and drive.
1—Noble & Wood Pulper—Iron Tub.
1—Lannoye Pulper.

**PUMPS**
1—Gould Triplex Hydraulic Pump, 2 x 6, 1750# pressure.
*Various sizes of Centrifugal and Plunger Pumps. Write us regarding your particular requirements.*
3—Shartle Brothers circulating pumps, each 4,000 g.p.m.
1—Frederick, 8 x 12, with motor.
1—Shartle, 8 x 14, 2000 g.p.m., 62' head, direct connected to circulating pump, with motor.

**REELS**
1—123"—3 bowl Revolving Reel.
1—72" Dowingtown Reel, 2 bowl.
1—134"—2 drum.

**REFINERS**
2—#1 Claflin Refiners.

**ROLLS**
Felt, Table, Press, Breast, Couch, etc. Various sizes and types. (Bronze, Rubber, Iron, etc.)

**ROTARY SCREENS**
2—#2 Bird—Copper vats—complete.

**SAVEALLS**
2—#5 Bird Saveall.
2—Savealls, 36" diameter x 136" face cylinder molds, iron end vats.

**SHEETERS**
1—124" Moore & White—with layboy.
1—138" Moore & White—with layboy.

**SHREDDERS**
2—Daniels Rag Cutters.

**SLITTERS & WINDERS**
1—115" 2 drum Waldron
1—104" Beloit two drum winder.
1—92" Moore & White 4 drum winder.
1—72" Cameron—Type 8-10.
1—72" Cameron—Type 10.
1—62" Cameron—Type 26-3A.
1—62" Cameron—Type 8-10.
1—62" Cameron—Type 10.
1—60" Langston (Shear cut).
1—52" Cameron—Type 6.
2—42" Cameron Type 40-1-AF
2—42" Cameron—Type 6.
1—42" Cameron Constant Tension with pneumatic control.
1—84" Langston Slitter.

**STOCK PUMPS**
1—10 x 20 Shartle Duplex.
1—7 x 16 Shartle Duplex.
2—10 x 10 Beloit Duplex, low type, with motors.
*Advise as to your requirements.*

**SUCTION BOXES**
5—136" face Suction Boxes.
6—140" face.

**SUCTION PRESS ROLLS**
1—Sandusky Suction Press Roll 130" drilled face x 14 3/16" diameter.
1—Sandusky Suction Press Roll 102" drilled face x 14 3/16" diameter.
1—Sandusky Suction Press Roll 88" drilled face x 14 3/16" diameter.
1—Textile Machinery Suction Press Roll. 120" drilled face x 22" diameter, complete.

**TABLE ROLLS**
23—5⅛" diameter x 138" face. (Rubber covered).

**THICKENERS**
1—Pulp Thickener, cylinder mold 48" x 117", with spare cylinder mold.

**TOILET WINDERS**
2—72" Hudson-Sharp (Surface type winder).
4—81" Deitz.
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**VACUUM PUMPS**
1—L-4 Nash Vacuum Pump.
1—N-82 Nash, for Fulton-Midwest System.

**WET MACHINE**
1—72" Wet Machine.

**YANKEE DRYERS**
1—48" Face x 84" Diameter, Frames & Bearings.

Paddy Ross, Pres. **J. J. ROSS COMPANY** Ben Kurs, Treas.
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WANTED | WANTED | WANTED

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**Sheeting — Slitting — Rewinding — Flat Cutting**
**all grades of paper**

**BUYERS OF JOB LOT PAPER ITEMS — SALVAGE — REJECTS, SIDE RUNS — DAMAGED, ETC.**

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M-16

## FOR SALE

### FOR SALE

42" Moore & White Sheeter.
100" Dillon Sheeter.
76" Cameron 8-10 Slitter.
52" Cameron 8-5 Slitter.
72" Two-Drum Upright News Reel.

**THOMAS W. HALL COMPANY, Inc.**
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FOR SALE—1—Swenson triple effect Evaporator, copper horiz. tube, total h.s. 1320 sq. ft. with piping, supporting steel, condenser, pumps, etc.; 1—Tolhurst 40" monel basket Centrifugal, 2 speed AC motor; 3 Oliver Filters, up to 8' x 12'. Send us your inquiries. CONSOLIDATED PRODUCTS CO., INC., 15-18 Park Row, New York 38, N. Y. BArclay 7-0600. TF

PAPER COATING MACHINERY MANUFACTURERS — Waxing, Oiling, Carbon Laboratory Coating and Treating and Flat Ream Measuring and Converting Machines. New improvement. THE MAYER MACHINE COMPANY, INC., 1313 Buffalo Road, Rochester, 11, N. Y. TF

FOR SALE—SIX HIGH PRESSURE boilers. Complete controls and equipment. Excellent condition. Immediate possession. A. W. Indeck, Wabash Boiler Division, 31 E. Congress St., Chicago, Ill. Telephone DElaware 7-9262. M-23

## FOR SALE

### FOR SALE

We are offering the following excellent Cameron Slitters and Rewinders complete with AC motor equipments.

1—42" type 6
1—62" type 6
1—52" type 10-5

Address box number 52-209 care Paper Trade Journal. M-16

### For Sale in the East

Excellent Tissue Paper Mill with wide Yankee Fourdrinier machine. Production — 12 tons 24 hours. Suitable for producing waxing paper, facial tissues, etc.

For further particulars address box number 52-210 care Paper Trade Journal. M-16

FOR SALE—45" Beck Sheeter with Elec. Eye; 48" Kidder Sheeter with Layboy; 62" Cameron Type 6; No. 7 Brightwood; ALSO MANY SET-UP AND FOLDING BOX MACHINES OF STANDARD MODELS. Write for listings. Address Box 52-168 care Paper Trade Journal. TF

**Buy U. S. Savings Bonds**

## FOR SALE

FOR SALE—1—Beloit heavy duty paper machine winder with rider roll—new in 1938—used less than one year. 94" width drums. Diameter of wound rolls 40"—with minor change can be increased to 44" maximum diameter rolls. Large diameter individually motor driven slitters. Winder is clean and complete with the exception of the drive unit. Reply to Box 52-208 care Paper Trade Journal. J-3

## GOVERNMENT BIDS

PROPOSALS FOR THE SALE OF SCRAP METALS AND THE REMOVAL OF DEBRIS, REFUSE WOOD, AND SAWDUST.

U. S. GOVERNMENT PRINTING OFFICE,
WASHINGTON, D. C., *April 30, 1952.*

Sealed proposals will be received at this Office until 2 o'clock p. m., May 19, 1952, E. D. S. T., for the sale of Scrap Metals and the removal of Debris, Refuse Wood, and Sawdust during the fiscal year beginning July 1, 1952. The right to reject any and all bids and to waive defects is reserved. Detailed specifications of the estimated quantities to be sold and removed, accompanied by blank proposals and giving regulations with which bidders must comply, may be obtained by addressing—

JOHN J. DEVINY,
*Public Printer.*
M-16

# THE PROGRESS OF PAPER

**Papyrus to Parchment to Paper dating from 2000 B.C.**

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Map of origin of paper, Egypt to the Near East. Also map of area of invention and progress of production. Illustrated with drawings and photographs of actual material, some of ancient origin.

European development.

Spain, Italy, Greece, France, Belgium, Holland, Germany, Poland, Russia, England, to 1800 A.D.

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American phase of transition, 1690-1775.

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An infant industry gradually becomes larger — development of American mills, 1800-1850.

***—and many other subjects.***

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Morningstar, Nichol, Inc.
National Starch Products, Inc.
Nopco Chemical Co.
Plaskon Division, Libbey-Owens-Ford Glass Co.
Reichhold Chemicals, Inc.
Rohm & Haas Co.

**ADJUSTABLE SHAKE MOTION**
Manchester Machine Co.
Rice Barton Corporation

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Dilts Machine Works, Inc.
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Improved Paper Machinery Corp.
E. D. Jones & Sons Co.
Midwest Fulton Mch. Co.
D. J. Murray Mfg. Co.
Moore & White Co.
The Noble & Wood Machine Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Valley Iron Works Co.
Shartle Brothers Machine Co.

**ALLOYS**
Michigan Steel Casting Co.

**ANTIFOAM**
American Cyanamid Company Industrial Chemicals Division
Hercules Powder Co., Inc.
National Aluminate Corp.
Nopco Chemical Co.

**APRON CLOTH**
Williams-Gray Co.

**BAG MACHINES**
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Potdevin Machine Co.
H. G. Weber & Co., Inc.

**BALL MILLS**
F. L. Smidth & Co.

**BARK BURNER**
Combustion Engineering-Superheater, Inc.
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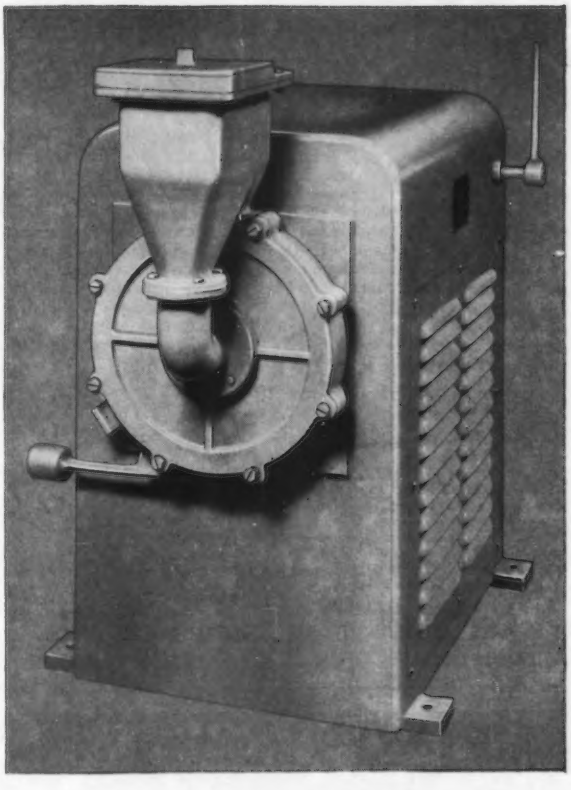

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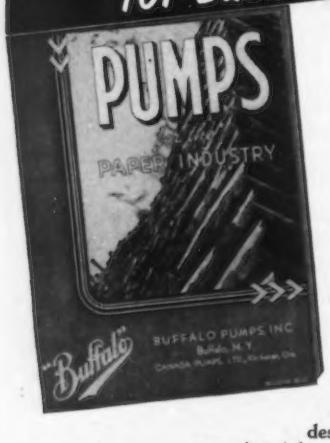


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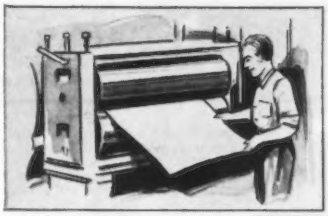

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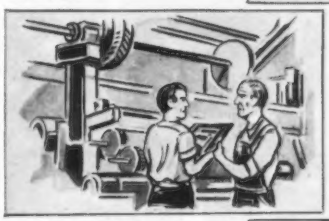

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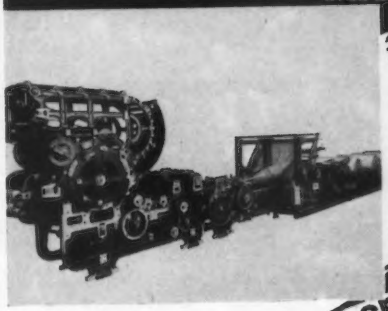

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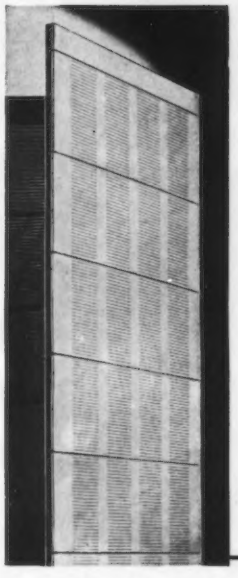

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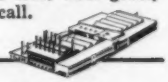

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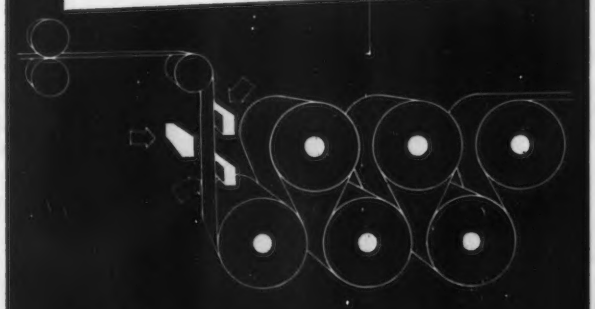

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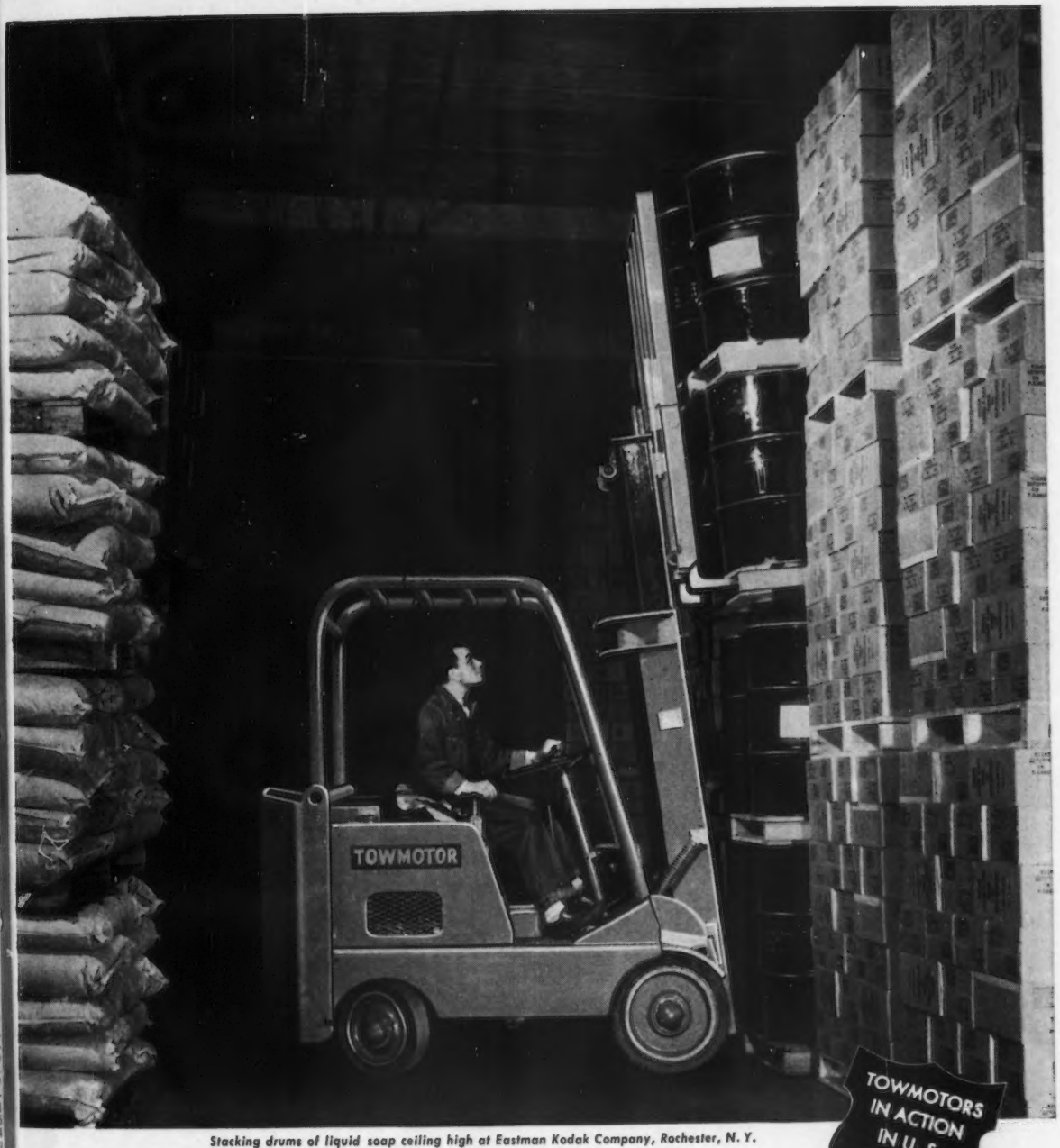


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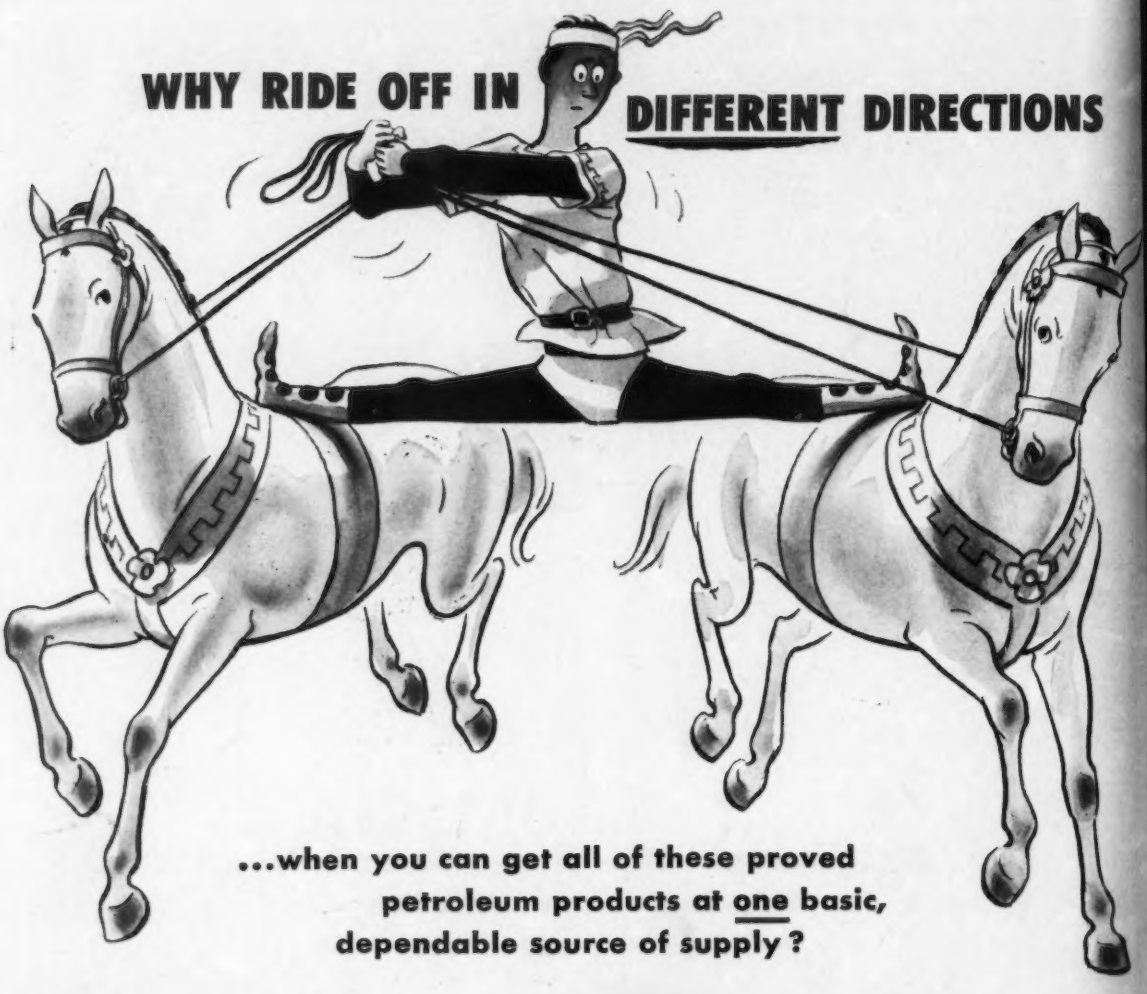

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